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TOOLPOWER CATALOG No. 308

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TOOLPOWER FOR MAINTENANCE CONSTRUCTION PRODUCTION



TRW J.H. WILLIAMS DIVISION
TRW INC., 400 VULCAN ST., BUFFALO, N. Y. 14207
INDUSTRIAL WRENCHES • HAND AND MACHINE SHOP TOOLS • FORGINGS • EXTRUSIONS

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CATALOG No. 308

This Catalog supersedes all previous issues. Finishes, materials and designs are subject to change without notice or regard to catalog descriptions. All prices are subject to change without notice. We reserve the right to discontinue items at anytime without notice.

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ORDER NOMENCLATURE

Throughout our catalog we have indicated, above the listings, samples of order nomenclature. By adopting this procedure our customers can reduce the cost of paper work and facilitate order entry for improved service. Non-standard or non-stock items should be fully described on orders accompanied by prints or drawings where possible.

MILITARY DESCRIPTIONS

Military Descriptions throughout this catalog are intended as a guide to classify types of tools and do not mean that the tool in each case is in full conformity to Military Specifications in their strictest form. Contact our factory for specific compliance or deviation information.

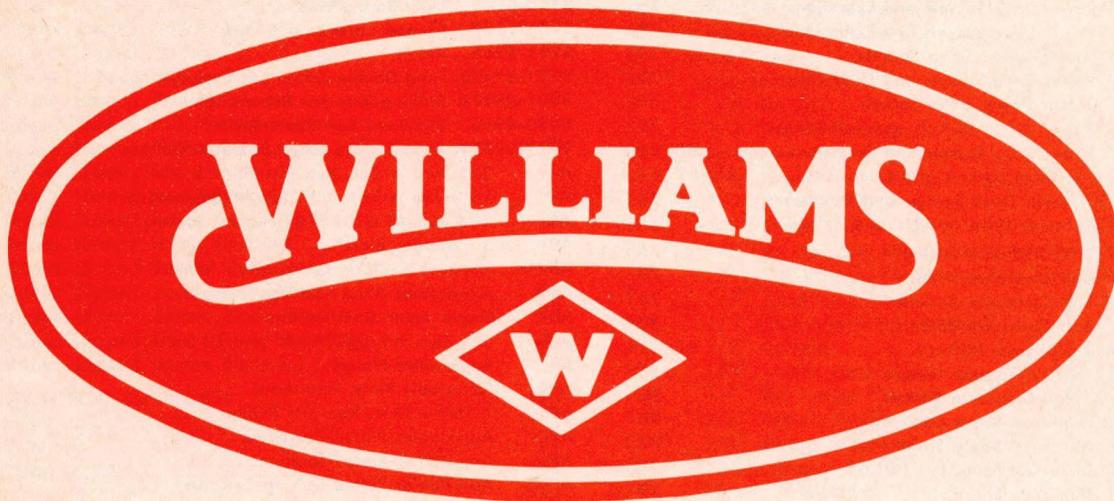
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KEY TO WILLIAMS NUMBERING AND PREFIXING SYSTEM

In addition to straight numerical designations, many numbers are preceded with alphabetical prefixes in this catalog. This has been done to eliminate duplications and to assist users in locating products in this catalog by number or prefix.

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Section 1 ALLOY WRENCHES and SETS

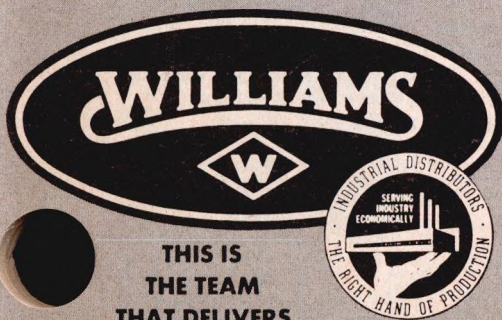
FOR TECHNICAL INFORMATION ABOUT THESE PRODUCTS

Ask for Technical Bulletin TB-121 which covers design features, quality wrench manufacture and competitive comparisons of Williams Superjustables and Superrenches.

SAFETY TIP

Never try to extend the length of a wrench by slipping a pipe over it. The extra leverage may well exceed the strength for which it was designed.

We design tools with your safety in mind.



TOOLPOWER
WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE





SUPERJUSTABLE® WRENCHES

SELECTED ALLOY STEEL

A SIZE AND STYLE FOR EVERY PURPOSE

Sliding jaw moves in accurately broached D-Slot for positive bearing under working stress



SIZES 4 THRU 12 INCH

SIZES 15 THRU 24 INCH



D-HOLE DESIGN

Thick web
Flat Contact

FOR DETAILED PRODUCT INFORMATION ASK FOR TECHNICAL BULLETIN No. TB-121



SIZES 4 THRU 12 INCH

SIZES 15 AND 18 INCH

REGULAR—CHROME PLATED

Drop-forged, heat-treated and chrome-plated over nickel. Finished with bright head faces and satin finish handles. Individually packaged.

Example of Order Nomenclature: "AP-12 CHROME ADJUSTABLE"MILITARY DESCRIPTION: GGG-W-631B-4, TYPE I, CLASS 1,
OPEN END 22½° HEAVY DUTY ADJUSTABLE

*Parts set consists of one each Knurl, Pin and Spring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
AP-4	4	1/2	9/64	5/16	.11	AP-4-1	AP-4-2
AP-6	6	3/4	7/32	3/8	.27	AP-6-1	AP-6-2
AP-8	8	1	17/64	1/2	.52	AP-8-1	AP-8-2
AP-10	10	1-1/8	23/64	19/32	.90	AP-10-1	AP-10-2
AP-12	12	1-5/16	15/32	23/32	1.6	AP-12-1	AP-12-2
AP-15	15	1-3/4	19/32	31/32	3.6	AP-15-1	AP-15-2
AP-18	18	2-1/16	23/32	1-3/16	6.	AP-18-1	AP-18-2
AP-24	24	2-7/16	7/8	1-3/8	9.1	AP-24-1	AP-24-2

REGULAR—BLACK FINISH

Drop-forged, heat-treated, industrial black finish with satin finish handles for firm, safe grip. Individually packaged. Here are all the features in design and strength plus economy.

Example of Order Nomenclature: "AB-8 BLACK ADJUSTABLE"

*Parts set consists of one each Knurl, Pin and Spring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
AB-4	4	1/2	9/64	5/16	.11	AB-4-1	AB-4-2
AB-6	6	3/4	7/32	3/8	.27	AB-6-1	AB-6-2
AB-8	8	1	17/64	1/2	.52	AB-8-1	AB-8-2
AB-10	10	1-1/8	23/64	19/32	.90	AB-10-1	AB-10-2
AB-12	12	1-5/16	15/32	23/32	1.6	AB-12-1	AB-12-2
AB-15	15	1-3/4	19/32	31/32	3.6	AB-15-1	AB-15-2
AB-18	18	2-1/16	23/32	1-3/16	6.	AB-18-1	AB-18-2

REGULAR CHROME—CEMENTEX HANDLES



Standard Cementex insulation on Williams Superjustables is designed to withstand a minimum of 5,000 RMS AC volts for one minute. This is a requirement of many power companies. Cementex insulated handles are tested 100% prior to shipment. In addition to protecting the hand, cementex insulation prevents metal to metal contact with surrounding objects. Cementex is not susceptible to peeling and cracking as is the case with some moulded insulations.

Example of Order Nomenclature: "APC-6 CEMENTEX ADJUST."

*Parts set consists of one each Knurl, Pin and Spring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
APU-6	6	15/16	13/64	3/8	.28	AP-6-1	AP-6-2
APU-8	8	1-1/8	1/4	31/64	.53	AP-8-1	AP-8-2
APU-10	10	1-5/16	11/32	37/64	.92	AP-10-1	AP-10-2
APU-12	12	1-1/2	15/32	23/32	1.8	AP-12-1	AP-12-2

SUPERJUSTABLE® PARTS ASSORTMENTS

No. APA-88B
Black Finish
No. APA-88C
Chrome Plated
Weight, 2.5 lbs.

Box contains 88 parts as follows:

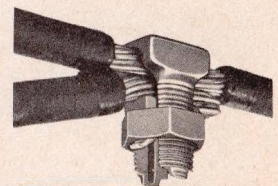
Size	Jaws	Knurls	Pins	Springs
4"	4	4	4	4
6"	6	6	6	6
8"	6	6	6	6
10"	4	4	4	4
12"	2	2	2	2

EXTRA CAPACITY SUPERJUSTABLES®



Extra capacity Superjustables often eliminate the need to use the next longer wrench size. Ideal for work where the convenience of a smaller, lighter wrench is desired. The 12 inch Superjustables with 1-1/2 inch capacity, are ideal for linemen working on cable connectors or taps up to 4/0 wire size. Handy for 3/4" brass fittings which are the most popular sizes used in connecting lines to water meters.

*Parts set consists of one each Knurl, Pin and Spring.

TYPICAL
CABLE CONNECTOR

No.	Size Inch	Cap.	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
APU-6	6	15/16	13/64	3/8	.28	APU-6 -1	APU-6 -2
APU-8	8	1-1/8	1/4	31/64	.53	APU-8 -1	APU-8 -2
APU-10	10	1-5/16	11/32	37/64	.92	APU-10-1	APU-10-2
APU-12	12	1-1/2	15/32	23/32	1.8	APU-12-1	APU-12-2

EXTRA CAPACITY—CEMENTEX HANDLE

APUC-12	12	1-1/2	15/32	23/32	1.8	APU-12-1	APU-12-2
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LOCKAJUST WRENCHES

SELECTED ALLOY STEEL

FOR DETAILED PRODUCT
INFORMATION ASK FOR
TECHNICAL BULLETIN No. TB-121



LOCKAJUST — CHROME PLATED

Drop-forged, heat-treated and chrome-plated over nickel. Finished with bright head faces and satin finish handles. Individually packaged.

Example of Order Nomenclature:
"APL-15 CHROME LOCKAJUST"

*Parts set consists of one each, Knurl, Pin and Retainer Ring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
APL-6	6	3/4	7/32	3/8	.27	AP-6-1	APL-6-3
APL-8	8	1	17/64	1/2	.52	AP-8-1	APL-8-3
APL-10	10	1-1/8	23/64	19/32	.90	AP-10-1	APL-10-3
APL-12	12	1-5/16	15/32	23/32	1.6	AP-12-1	APL-12-3
APL-15	15	1-3/4	19/32	31/32	3.6	AP-15-1	APL-15-3

LOCKAJUST — BLACK FINISH

Drop-forged, heat-treated, industrial black finish with satin finish handles for firm, safe grip. Individually packaged. Here are all the features in design and strength plus economy.

Example of Order Nomenclature:
"ABL-12 BLACK LOCKAJUST"

*Parts set consists of one each, Knurl, Pin and Retainer Ring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
ABL-6	6	3/4	7/32	3/8	.27	AB-6-1	APL-6-3
ABL-8	8	1	17/64	1/2	.52	AB-8-1	APL-8-3
ABL-10	10	1-1/8	23/64	19/32	.90	AB-10-1	APL-10-3
ABL-12	12	1-5/16	15/32	23/32	1.6	AB-12-1	APL-12-3
ABL-15	15	1-3/4	19/32	31/32	3.6	AB-15-1	APL-15-3

GENERAL PURPOSE SETS

SET
No. WS-8R
3 Tools
in
K-6
Roll Kit
Weight,
1.3 lbs.

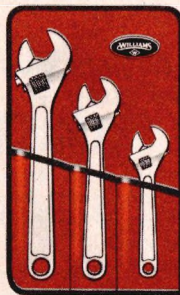


Ideal for numerous small jobs around home, office and automobile.

Example of Order Nomenclature: "WS-5R SET IN ROLL"

One Ea.	Description
DR-24	4" Screwdriver
APL-8	8" Lockajust Wrench
PL-6	6" Slip Joint Pliers

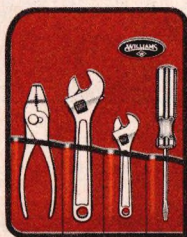
SET
No. WS-4R
3 Wrenches
in
K-6
Roll Kit
Weight,
1.7 lbs.



A handy set of three Lockajust wrenches with capacities up to 1 1/8".

One Ea.	Description
APL-6	6" Lockajust Wrench
APL-8	8" Lockajust Wrench
APL-10	10" Lockajust Wrench

SET
No. WS-7R
4 Tools
in
K-5
Roll Kit
Weight,
.75 lbs.



Convenient and compact for home, office and car. Does many jobs.

One Ea.	Description
AP-4	4" Superjustable
APL-6	6" Lockajust Wrench
PL-15	5" Thin Nose Pliers
DE-43	3" Screwdriver

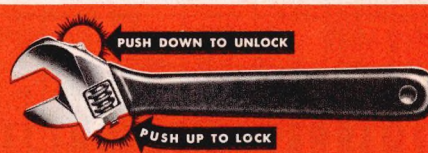
SET
No. WS-5R
3 Tools
in
K-4 Roll Kit
Weight,
.63 lbs.



For small and medium work, this set is hard to beat for versatility.

One Ea.	Description
APL-6	6" Lockajust Wrench
PL-15	5" Thin Nose Pliers
DE-43	3" Screwdriver

LOCKAJUST CHROME-CEMENTEX HANDLES



Standard Cementex insulation on Williams Superjustables is designed to withstand a minimum of 5,000 RMS AC volts for one minute. This is a requirement of many power companies. Cementex insulated handles are tested 100% prior to shipment. In addition to protecting the hand, cementex insulation prevents metal to metal contact with surrounding objects. Cementex is not susceptible to peeling and cracking as is the case with some moulded insulations.

Example of Order Nomenclature: "APLC-12 CEMENTEX LOCK."

*Parts set consists of one each, Knurl, Pin and Retainer Ring.

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
APLC-6	6	3/4	7/32	3/8	.27	AP-6-1	APL-6-3
APLC-8	8	1	17/64	1/2	.52	AP-8-1	APL-8-3
APLC-10	10	1-1/8	23/64	19/32	.90	AP-10-1	APL-10-3
APLC-12	12	1-5/16	15/32	23/32	1.6	AP-12-1	APL-12-3

LOCKAJUST PARTS ASSORTMENTS



No. APA-92BL
Black Finish
No. APA-92L
Chrome-Plated
Weight, 2.6 lbs.

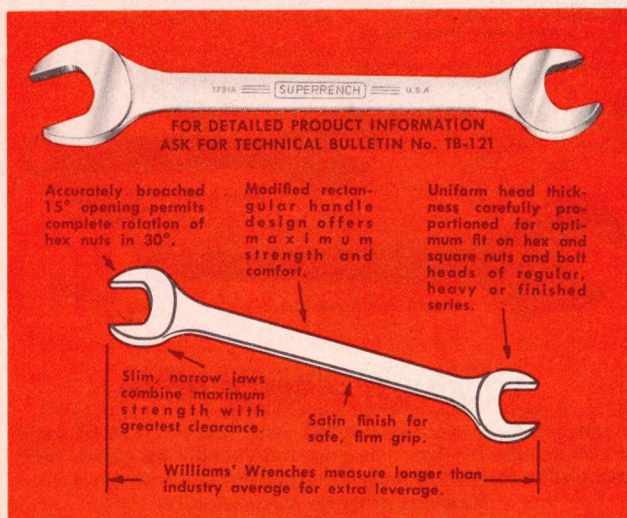
Box contains 92 parts. Repair instructions are included in each kit.

Size	Jaws	Knurls	Pins	Retainer Rings
6"	6	6	6	12
8"	6	6	6	12
10"	4	4	4	8
12"	2	2	2	6

OPEN-END SUPERRENCH®

SELECTED ALLOY STEEL

DOUBLE HEAD—15° ANGLE



See Page 58 for Metric Sizes

The Selected Alloy Steel from which these Superrenches are drop-forged assures ample strength for the severest service. Finish is chrome-plate over nickel with faces polished bright.

Example or Order Nomenclature: "1731 WRENCH"

MILITARY DESCRIPTION:

GGG-W-636D-5, TYPE IV,

ENGINEERS' WRENCH, DOUBLE HEAD, OPEN END, 15°

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each, Lbs.
		Width	Thick.	Width	Thick.		
1020	1/4 & 5/16	1/2	5/32	39/64	5/32	3-13/16	.03
1720	5/16 & 11/32	39/64	3/16	23/32	3/16	4- 1/4	.05
1721	5/16 & 3/8	39/64	3/16	23/32	3/16	4- 1/4	.05
1021	5/16 & 13/32	39/64	13/64	25/32	13/64	4- 1/2	.06
1723	3/8 & 7/16	47/64	13/64	53/64	13/64	4-11/16	.07
1023	13/32 & 1/2	25/32	7/32	15/16	7/32	4- 7/8	.08
1723A	3/8 & 1/2	25/32	7/32	15/16	7/32	4- 7/8	.08
1725	7/16 & 1/2	53/64	7/32	15/16	7/32	5- 1/8	.10
1725A	7/16 & 9/16	53/64	15/64	1- 1/16	15/64	5- 5/8	.12
1725B	1/2 & 9/16	15/16	1/4	1- 1/8	1/4	6- 1/4	.15
1025	1/2 & 19/32	15/16	1/4	1- 1/8	1/4	6- 1/4	.16
1727	9/16 & 5/8	1- 1/16	17/64	1-11/64	17/64	6- 7/8	.20
1027C	9/16 & 11/16	1- 1/16	9/32	1-19/64	9/32	7- 1/8	.23
1027	19/32 & 11/16	1-11/64	9/32	1-19/64	9/32	7- 1/2	.26
1027B	5/8 & 11/16	1-11/64	9/32	1-19/64	9/32	7- 1/2	.26
1028	19/32 & 25/32	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
1028S	5/8 & 25/32	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
1729	5/8 & 3/4	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
1029B	11/16 & 3/4	1-19/64	5/16	1-17/32	5/16	9	.38
1029	11/16 & 25/32	1-19/64	5/16	1-17/32	5/16	9	.38
1029C	11/16 & 13/16	1-19/64	5/16	1-17/32	5/16	9	.37
1030	11/16 & 7/8	1-19/64	21/64	1-41/64	21/64	9- 3/8	.45
1731	3/4 & 13/16	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
1731A	3/4 & 7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
1031B	25/32 & 13/16	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
1031	25/32 & 7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.53
1731B	13/16 & 7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.53
1032B	13/16 & 15/16	1-41/64	3/8	1- 3/4	3/8	10- 1/2	.71
1033A	7/8 & 15/16	1-41/64	3/8	1- 3/4	3/8	10- 1/2	.69
1733	7/8 & 1	1- 3/4	13/32	2	13/32	11- 3/8	.92
1033C	15/16 & 1	1- 3/4	13/32	2	13/32	11- 3/8	.91
1034	7/8 & 1-1/16	1- 3/4	13/32	2	13/32	11- 3/8	.90
1034A	15/16 & 1-1/16	1- 3/4	13/32	2	13/32	11- 3/8	.90
1035	31/32 & 1-1/16	1- 3/4	13/32	2	13/32	11- 3/8	.92
1735	1 & 1-1/8	2	7/16	2- 7/64	7/16	12- 1/4	1.1
1036B	1-1/16 & 1-1/8	2	7/16	2- 7/64	7/16	12- 1/4	1.2
1037	1-1/16 & 1-1/4	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
1737	1-1/8 & 1-1/4	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
1037A	1-1/8 & 1-5/16	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
1039B	1-1/4 & 1-5/16	2-11/32	1/2	2-11/16	1/2	14- 3/8	1.9
1039	1-1/4 & 1-7/16	2-11/32	1/2	2-11/16	1/2	14- 3/8	1.8
1039A	1-5/16 & 1-1/2	2-37/64	17/32	2-13/16	17/32	15- 1/2	2.3
1039C	1-3/8 & 1-7/16	2-37/64	17/32	2-13/16	17/32	15- 1/2	2.3
1040	1-1/4 & 1-5/8	2-11/32	35/64	3- 3/64	35/64	16- 1/8	2.5
1041	1-7/16 & 1-5/8	2-11/32	9/16	3- 3/64	9/16	16- 5/8	2.7
1041B	1-1/2 & 1-5/8	2-13/16	9/16	3- 3/64	9/16	16- 5/8	2.7

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

OPEN-END SUPERRENCH® SETS

SELECTED ALLOY STEEL

DOUBLE HEAD—15° ANGLE

SET No. WS-1005AR

6 Wrenches

In K-10 Roll Kit

SET No. WS-1005AB

In Cardboard Box

Weight, 4.3 lbs.



Example of Order Nomenclature: "WS-1005AR SET IN ROLL"

No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-1005AR and WS-1005AB

This set fits all new American Standard Regular and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 3/4" and Heavy Series nuts and bolts 1/4 thru 5/8".

1725	7/16 & 1/2	1731A	3/4 & 7/8
1727	9/16 & 5/8	1033C	15/16 & 1
1029C	11/16 & 13/16	1036B	1- 1/16 & 1-1/8

SET No. WS-1025BR

6 Wrenches

In K-10 Roll Kit

SET No. WS-1025BB

In Cardboard Box

Weight, 2.8 lbs.



Example of Order Nomenclature: "WS-1025BB SET IN BOX"

No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-1025BR and WS-1025BB

This set fits all new American Standard Regular, Heavy and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 5/8".

1723	3/8 & 7/16	1029C	11/16 & 13/16
1725B	1/2 & 9/16	1733	7/8 & 1
1729	5/8 & 3/4	1034A	15/16 & 1-1/16

SET No. WS-1712AR

11 Wrenches

In K-19 Roll Kit

SET No. WS-1712AB

In Cardboard Box

Weight, 10.8 lbs.



Example of Order Nomenclature: "WS-1712AR SET IN ROLL"

No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-1712AR and WS-1712AB

This set fits all new and old American Standard Regular and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 1" and Heavy Series nuts and bolts 1/4 thru 7/8".

1020	1/4 & 5/16	1033A	7/8 & 15/16
1723	3/8 & 7/16	1735	1 & 1- 1/8
1025	1/2 & 19/32	1037	1-1/16 & 1- 1/4
1727	9/16 & 5/8	1039A	1-5/16 & 1- 1/2
1029	11/16 & 25/32	1039C	1-3/8 & 1- 7/16
1731	3/4 & 13/16		



OPEN-END SUPERRENCH®

SELECTED ALLOY STEEL

SINGLE HEAD—15° ANGLE



Drop-forged, heat-treated, chrome-plated, faces polished.

Example of Order Nomenclature: "1702 WRENCH"

MILITARY DESCRIPTION:

GGG-W-636D-5, TYPE V, ENGINEERS' WR., SINGLE HEAD, OPEN END, 15°

No.	Nominal Opening	Head		Overall Length	Weight Each, Lbs.
		Width	Thickness		
1000	5/16	25/32	3/16	3-5/8	.07
1700	3/8	15/16	7/32	4-1/8	.09
1701	7/16	1- 5/32	1/4	4-3/4	.13
1001	1/2	1- 5/32	1/4	4-3/4	.13
1702	9/16	1-11/32	9/32	5-5/8	.22
1703	5/8	1-17/32	5/16	6-1/2	.33
1003	11/16	1-17/32	5/16	6-1/2	.33
1704	3/4	1-13/16	11/32	7-3/8	.48
1705	13/16	2	13/32	8-3/8	.65
1005	7/8	2	13/32	8-3/8	.65
1006	15/16	2- 1/4	15/32	9-1/2	.92
1706	1	2- 1/4	15/32	9-1/2	.92
1007	1- 1/16	2- 9/16	17/32	10-3/4	1.5
1707	1- 1/8	2- 9/16	17/32	10-3/4	1.5
1008	1- 1/4	2-15/16	5/8	12-1/4	2.2
1008A	1- 5/16	2-15/16	5/8	12-1/4	2.2
1009	1- 7/16	3- 3/8	11/16	13-7/8	2.8
1709	1- 1/2	3- 3/8	11/16	13-7/8	2.8
1010	1- 5/8	3-21/32	3/4	15-1/2	3.9
1010A	1-11/16	3-21/32	3/4	15-1/2	3.9
1011	1-13/16	4- 1/16	27/32	17-1/8	4.8
1011A	1- 7/8	4- 1/16	27/32	17-1/8	4.8
1012	2	4- 1/2	29/32	18-7/8	6.2
1012A	2- 1/16	4- 1/2	29/32	18-7/8	6.2
1013	2- 3/16	4-15/16	31/32	20-3/4	8.
1013A	2- 1/4	4-15/16	31/32	20-3/4	8.
1014	2- 3/8	5- 5/16	1- 1/32	22-3/4	10.
1014A	2- 7/16	5- 5/16	1- 1/32	22-3/4	10.

WILLIAMS

ELECTRONIC SUPERRENCH®

SELECTED ALLOY STEEL

15° and 60° ANGLE OPENINGS

DIFFERENT OPENINGS
IN EACH HEAD

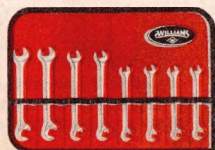
Drop-forged, heat-treated, chrome-plated, faces polished.

Example of Order Nomenclature: "OEE-1416 WRENCH"

MILITARY DESCRIPTION: GGG-W-636D-5, TYPE VI, STYLE 1,

IGNITION WR., DOUBLE HEAD, OPEN END, 15° & 60° HEADS

No.	Nominal Openings		Either Head		Overall Length	Wgt. Ea., Lbs.
	15° Head	60° Head	Width	Thick.		
OEE-1315	13/64	15/64	1/2	3/32	3	.01
OEE-1513	15/64	13/64	1/2	3/32	3	.01
OEE-1416	7/32	1/4	1/2	3/32	3	.01
OEE-1614	1/4	7/32	1/2	3/32	3	.01
OEE-1820	9/32	5/16	37/64	1/8	3-3/4	.02
OEE-2018	5/16	9/32	37/64	1/8	3-3/4	.02
OEE-2224	11/32	3/8	47/64	1/8	3-3/4	.03
OEE-2422	3/8	11/32	47/64	1/8	3-3/4	.03

Set No. WS-1148R
8 Wrenches Listed Above
In K-21 Roll KitSet No. WS-1148B
8 Wrenches Listed Above
In Cardboard Box
Weight, .21 lbs.

ELECTRONIC SUPERRENCH®

SELECTED ALLOY STEEL

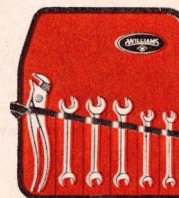
15° ANGLE OPENINGS

DIFFERENT OPENINGS
IN EACH HEAD

Electronic Superrenches are unusually thin and slim, but surprisingly tough and strong. Forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, faces polished.

Example of Order Nomenclature:**"1108 WRENCH" or "WS-1149R SET IN ROLL"**MILITARY DESCRIPTION: GGG-W-636D-5, TYPE VI, STYLE 4,
IGNITION WR., DOUBLE HEAD, OPEN END, 15° HEADS

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Ea., Lbs.
		Width	Thick.	Width	Thick.		
1106	13/64 & 7/32	1/2	3/32	1/2	3/32	3	.01
1107	15/64 & 1/4	1/2	3/32	1/2	3/32	3	.01
1108	9/32 & 11/32	5/8	1/8	47/64	1/8	3-1/2	.03
1108A	1/4 & 5/16	5/8	1/8	47/64	1/8	3-1/2	.03
1109	5/16 & 3/8	5/8	1/8	47/64	1/8	3-1/2	.03

SET No. WS-1149R
5 Wrenches Listed Above
In K-2 Roll KitSET No. WS-1149B
5 Wrenches Listed Above
In Cardboard Box
Weight, .13 lb.SET No. WS-1149PR
5 Wrenches Listed Above
1 PL-1519 Pliers in K-3 Roll KitSET No. WS-1149PB
5 Wrenches Listed Above
1 PL-1519 Pliers in Box
Weight, .25 lb.

WILLIAMS

ELECTRONIC SUPERRENCH®

SELECTED ALLOY STEEL

15° and 75° ANGLE OPENINGS

SAME OPENINGS
IN EACH HEADMILITARY DESCRIPTION: GGG-W-636D-5, TYPE VI, STYLE 2,
IGNITION WR., DOUBLE HEAD, OPEN END, 15° & 75° HEADS

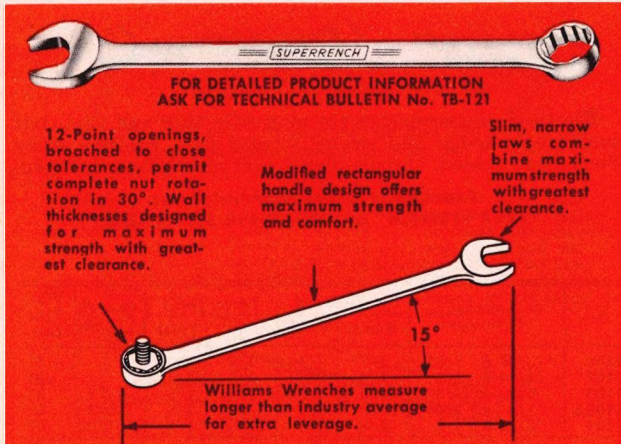
No.	Nominal Openings	Either Head		Overall Length	Weight Ea., Lbs.
		Width	Thickness		
1112	3/16 & 3/16	1/2	3/32	3	.01
1113	13/64 & 13/64	1/2	3/32	3	.01
1114	7/32 & 7/32	1/2	3/32	3	.01
1115	15/64 & 15/64	1/2	3/32	3	.01
1116	1/4 & 1/4	1/2	3/32	3	.01
1118	9/32 & 9/32	37/64	1/8	3-3/4	.02
1120	5/16 & 5/16	37/64	1/8	3-3/4	.02
1122	11/32 & 11/32	47/64	1/8	3-3/4	.03
1124	3/8 & 3/8	47/64	1/8	3-3/4	.03
1128	7/16 & 7/16	63/64	5/32	4-1/2	.06
1132	1/2 & 1/2	63/64	5/32	4-1/2	.06
1136	9/16 & 9/16	1-5/32	3/16	5-1/2	.11
1140	5/8 & 5/8	1-5/32	3/16	5-1/2	.11

SET No. WS-1142PR
13 Wrenches Listed Above
1 PL-1519 Pliers
In K-11 Roll KitSET No. WS-1142PB
13 Wrenches Listed Above
1 PL-1519 Pliers
In Cardboard Box
Weight, .78 lb.

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

BOX-OPEN END SUPERRENCH®

SELECTED ALLOY STEEL

LONG SERIES — 15° ANGLE — 12 PT. BOX

See Page 58 for Metric Sizes

Drop-forged from tough Selected Alloy Steel, heat-treated and chrome-plated over nickel with faces of open ends and box ends polished. Box end, with 12-point opening, is offset from plane of handle, same size opening in both heads.

Example of Order Nomenclature: "1166A WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE III, COMBINATION, OPEN END AND 15° OFFSET
BOX OPENING

No.	Nominal Openings	Open End		Box End		Overall Length	Wgt. Each, Lbs.
		Width	Thick.	Diam.	Thick.		
1158	1/4 & 1/4	35/64	5/32	13/32	3/16	5	.04
1159	5/16 & 5/16	11/16	3/16	17/32	7/32	5- 1/2	.06
1159A	11/32 & 11/32	11/16	3/16	17/32	7/32	5- 1/2	.06
1160	3/8 & 3/8	51/64	13/64	37/64	1/4	6	.08
1161	7/16 & 7/16	29/32	7/32	21/32	5/16	6- 5/8	.13
1162	1/2 & 1/2	1- 1/32	1/4	47/64	21/64	7- 3/16	.16
1163	9/16 & 9/16	1- 5/32	9/32	53/64	11/32	7-15/16	.21
1163A	19/32 & 19/32	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
1164	5/8 & 5/8	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
1165	11/16 & 11/16	1-13/32	5/16	1- 1/64	13/32	9- 5/8	.35
1166	3/4 & 3/4	1-17/32	11/32	1- 3/32	7/16	10- 5/8	.46
1166A	25/32 & 25/32	1- 5/8	23/64	1-11/64	15/32	11- 9/16	.58
1167A	13/16 & 13/16	1- 5/8	23/64	1-11/64	15/32	11- 9/16	.56
1167	7/8 & 7/8	1- 3/4	3/8	1- 1/4	1/2	12-11/16	.69
1168	15/16 & 15/16	1-55/64	25/64	1-21/64	9/16	13- 7/8	.85
1170	1 & 1	1-31/32	13/32	1-27/64	5/8	15- 1/8	1.
1171	1-1/16 & 1-1/16	2- 3/32	27/64	1- 1/2	43/64	16- 1/4	1.3
1172	1-1/8 & 1-1/8	2- 7/32	7/16	1- 9/16	21/32	17- 7/16	1.5
1173	1-1/4 & 1-1/4	2-15/32	15/32	1-25/32	3/4	18-11/16	1.9
1174	1-5/16 & 1-5/16	2-19/32	1/2	1-27/32	25/32	20	2.2
1176A	1-3/8 & 1-3/8	2-61/64	9/16	2- 3/32	27/32	21- 5/16	3.3
1176	1-7/16 & 1-7/16	2-61/64	9/16	2- 3/32	27/32	21- 5/16	3.1
1178	1-1/2 & 1-1/2	2-61/64	9/16	2- 3/32	27/32	21- 5/16	3.
1180	1-5/8 & 1-5/8	3-13/64	5/8	2- 5/16	29/32	22- 3/4	3.9
1182	1-11/16 & 1-11/16	3-13/64	5/8	2- 5/16	29/32	22- 3/4	3.8
1184	1-3/4 & 1-3/4	3-15/16	3/4	2- 7/8	1-1/16	26	6.9
1186	1-13/16 & 1-13/16	3-15/16	3/4	2- 7/8	1-1/16	26	6.7
1188	1-7/8 & 1-7/8	3-15/16	3/4	2- 7/8	1-1/16	26	6.6
1190	2 & 2	3-15/16	3/4	2- 7/8	1-1/16	26	6.4
1191	2-1/16 & 2-1/16	3-15/16	3/4	2- 7/8	1-1/16	26	6.2
1192	2-1/8 & 2-1/8	4-13/32	27/32	3- 1/8	1-1/8	28	10.
1193	2-3/16 & 2-3/16	4-13/32	27/32	3- 1/8	1-1/8	28	9.8
1194	2-1/4 & 2-1/4	4-13/32	27/32	3- 1/8	1-1/8	28	9.6

LONG SERIES — 15° ANGLE — HEX BOX

Example of Order Nomenclature: "XOE-618 WRENCH"

No.	Nominal Openings	Open End		Box End		Overall Length	Wgt. Each, Lbs.
		Width	Thick.	Diam.	Thick.		
XOE-610	5/16 & 5/16	11/16	3/16	17/32	7/32	5- 1/2	.06
XOE-612	3/8 & 3/8	51/64	13/64	37/64	1/4	6	.08
XOE-614	7/16 & 7/16	29/32	7/32	21/32	5/16	6- 5/8	.13
XOE-616	1/2 & 1/2	1- 1/32	1/4	47/64	21/64	7- 3/16	.16
XOE-618	9/16 & 9/16	1- 5/32	9/32	53/64	11/32	7-15/16	.21
XOE-620	5/8 & 5/8	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
XOE-622	11/16 & 11/16	1-13/32	5/16	1-1/64	13/32	9- 5/8	.35
XOE-624	3/4 & 3/4	1-17/32	11/32	1-3/32	7/16	10- 5/8	.46

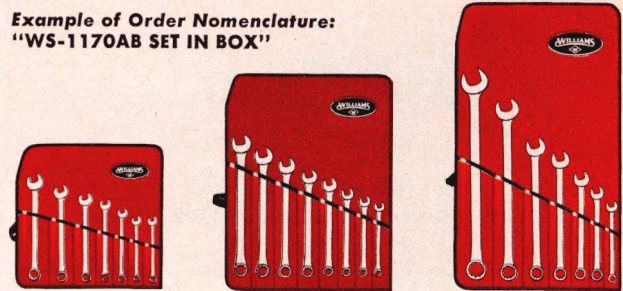
See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

BOX-OPEN END SUPERRENCH® SETS

SELECTED ALLOY STEEL

LONG SERIES — 15° ANGLE

Example of Order Nomenclature:
"WS-1170AB SET IN BOX"



SET No. WS-1173SR
7 Wrenches
in K-7 Roll Kit

SET No. WS-1170AR
8 Wrenches
in K-15 Roll Kit

SET No. WS-1171AR
7 Wrenches
in K-14 Roll Kit

SET No. WS-1173SB
In Cardboard Box
Weight, 1.6 lbs.

SET No. WS-1170AB
In Cardboard Box
Weight, 3.5 lbs.

SET No. WS-1171AB
In Cardboard Box
Weight, 6.2 lbs.

No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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SETS Nos. WS-1173SR and WS-1173SB

This set fits most new and old American Standard Regular and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 7/16".

1159	5/16" x 5/16"	1161	7/16" x 7/16"	1164	5/8" x 5/8"
1159A	1 1/32" x 1 1/32"	1162	1 1/2" x 1 1/2"	.....	.....
1160	3/8" x 3/8"	1163	9/16" x 9/16"	.....	.....

SETS Nos. WS-1170AR and WS-1170AB

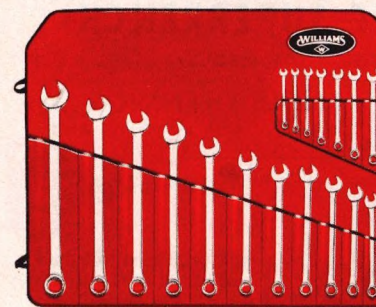
This set fits all new American Standard Regular and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 7/16" and Heavy Series nuts and bolts 1/4 thru 1/2".

1161	7/16" x 7/16"	1164	5/8" x 5/8"	1167A	1 1/16" x 1 1/16"
1162	1 1/2" x 1 1/2"	1165	1 1/16" x 1 1/16"	1167	7/8" x 7/8"
1163	9/16" x 9/16"	1166	3/4" x 3/4"	.....	.....

SETS Nos. WS-1171AR and WS-1171AB

This set fits all new and old American Standard Heavy Series nuts and bolts 1/4 thru 3/4" except 7/16".

1162	1 1/2" x 1 1/2"	1166	3/4" x 3/4"	1173	1 1/4" x 1 1/4"
1163	9/16" x 9/16"	1167	7/8" x 7/8"	.....	.....
1165	1 1/16" x 1 1/16"	1171	1 1/16" x 1 1/16"	.....	.....



SET No. WS-1172SR
18 Wrenches in K-20 Roll Kit

SET No. WS-1172SB
In Cardboard Box
Weight, 11.9 lbs.



SET No. WS-1R
8 Wrenches
in K-15 Roll Kit
SET No. WS-1B
In Cardboard Box
Weight, 3.5 lbs.

No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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SETS Nos. WS-1172SR and WS-1172SB

This set fits all new and old American Standard Regular, Heavy and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 3/4".

1159	5/16" x 5/16"	1163A	1 1/32" x 1 1/32"	1167	7/8" x 7/8"
1159A	1 1/32" x 1 1/32"	1164	5/8" x 5/8"	1168	1 1/16" x 1 1/16"
1160	3/8" x 3/8"	1165	1 1/16" x 1 1/16"	1170	1" x 1"
1161	7/16" x 7/16"	1166	3/4" x 3/4"	1171	1 1/16" x 1 1/16"
1162	1 1/2" x 1 1/2"	1166A	1 1/16" x 1 1/16"	1172	1 1/8" x 1 1/8"
1163	9/16" x 9/16"	1167A	1 1/16" x 1 1/16"	1173	1 1/4" x 1 1/4"

SETS Nos. WS-1R and WS-1B

This set fits most new American Standard Regular and Finished Series nuts and bolt heads, hex head Cap Screws and hex Machine Screw or Stove Bolt nuts 1/4 thru 1/2".

XOE-610	5/16" x 5/16"	XOE-616	1 1/2" x 1 1/2"	XOE-622	1 1/16" x 1 1/16"
XOE-612	3/8" x 3/8"	XOE-618	9/16" x 9/16"	XOE-624	3/4" x 3/4"
XOE-614	7/16" x 7/16"	XOE-620	5/8" x 5/8"	.....	.....

BOX/OPEN END SUPERRENCH®

SELECTED ALLOY STEEL

ELECTRONIC SERIES—15° ANGLE



These Electronic Superrenches are unusually thin and slim, but tough and strong. Forged, heat-treated and chrome plated. XOEE-604 thru 611 have 6-point box ends. XOEE-1212 thru 1224 have 12-point box ends.

Example of Order Nomenclature: "XOEE-606 WRENCH,"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE III, COMBINATION, BOX AND OPEN END

No.	Nominal Openings	Open End		Box End		Overall Length	Weight Ea. Lbs.
		Width	Thick.	Diam.	Thick.		
XOEE-604	1/8 & 1/8	5/16	7/64	9/32	1/8	3	.01
XOEE-605	5/32 & 5/32	9/16	7/64	9/32	1/8	3	.01
XOEE-606	3/16 & 3/16	27/64	7/64	23/64	1/8	3-1/16	.02
XOEE-607	7/32 & 7/32	27/64	7/64	23/64	1/8	3-1/16	.02
XOEE-608	1/4 & 1/4	1 1/2	1/8	23/64	9/64	3-1/8	.02
XOEE-609	9/32 & 9/32	35/64	1/8	23/64	9/64	3-3/8	.04
XOEE-610	5/16 & 5/16	5/8	9/64	19/32	5/32	3-11/16	.04
XOEE-611	11/32 & 11/32	49/64	9/64	19/32	5/32	4	.05
XOEE-1212	3/8 & 3/8	47/64	3/16	35/64	15/64	4-3/8	.08
XOEE-1214	7/16 & 7/16	13/16	3/16	13/16	5/8	4-11/16	.11
XOEE-1216	1/2 & 1/2	1 1/16	3/16	45/64	5/16	5-1/16	.16
XOEE-1218	9/16 & 9/16	1 5/16	15/64	13/16	21/64	5-1/2	.22
XOEE-1220	5/8 & 5/8	1-5/32	17/64	57/64	11/32	5-11/16	.28
XOEE-1222	11/16 & 11/16	1-9/32	9/32	31/32	3/8	6-7/16	.38
XOEE-1224	3/4 & 3/4	1-25/64	19/64	1-1/16	13/32	6-7/8	.51

SET No. WS-2R
9 Wrenches in K-25 Roll Kit

SET No. WS-2B
In Cardboard Box

Weight, .40 lbs.



No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-2R and WS-2B

This set of nine combination Superrenches is ideal for electronic and business machine applications.

XOEE-604	1/8 & 1/8	XOEE-607	7/32 & 7/32	XOEE-610	5/16 & 5/16
XOEE-605	5/32 & 5/32	XOEE-608	1/4 & 1/4	XOEE-611	11/32 & 11/32
XOEE-606	3/16 & 3/16	XOEE-609	9/32 & 9/32	XOEE-1212	3/8 & 3/8

SET No. WS-50R
4 Wrenches in K-5 Roll Kit

SET No. WS-50B
In Cardboard Box

Weight, .94 lbs.



No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-50R and WS-50B

This set of four combination Superrenches is well adapted for use in limited quarters on most smaller nuts and bolts 1/4 thru 3/16" diameters.

XOEE-1214	7/16" x 7/16"	XOEE-1218	9/16" x 9/16"		
XOEE-1216	1/2" x 1/2"	XOEE-1220	5/8" x 5/8"		

SET No. WS-51R
8 Wrenches in K-12 Roll Kit

SET No. WS-51B
In Cardboard Box

Weight, 2.1 lbs.



No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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CONTENTS-SETS Nos. WS-51R and WS-51B

This set of eight combination Superrenches can be used on most regular and finished series nuts and bolts and hex head cap screws 1/4 thru 1/2" dia. heavy series 1/4 thru 7/16" dia. and set screws 5/16 thru 3/4" dia.

XOEE-610	5/16" x 5/16"	XOEE-1216	1/2" x 1/2"	XOEE-1222	1 1/16" x 1 1/16"
XOEE-1212	3/8" x 3/8"	XOEE-1218	9/16" x 9/16"	XOEE-1224	3/4" x 3/4"
XOEE-1214	7/16" x 7/16"	XOEE-1220	5/8" x 5/8"		

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

FLARE NUT SUPERRENCH®

SELECTED ALLOY STEEL

SPLIT BOX - OPEN END COMBINATION



Open box end, has a 6-point opening offset 15° from plane of handle with a tube opening slot at 22-1/2° to the axis of the handle. Open end is thin, with slim jaws and opening at angle of 15°.

Example of Order Nomenclature: "1320 WRENCH"

No.	Open End		Open-Box End			Overall Length	Weight Each, Lbs.
	Nominal Opening	Thick-ness Head	Nominal Opening	Out-side Diam.	Thick-ness Head		
1312	3/8	3/16	3/8	21/32	5/16	1/4	5-5/8 .07
1314	7/16	13/64	7/16	25/32	11/32	9/32	6 .10
1316	1/2	7/32	1/2	29/32	7/16	3/8	6-3/8 .15
1318	9/16	15/64	9/16	31/32	7/16	7/16	6-7/8 .20
1320	5/8	1/4	5/8	1-1/64	1/2	15/32	7-5/8 .25
1322	11/16	5/16	11/16	1-9/32	9/16	9/16	8-3/4 .44
1324	3/4	5/16	3/4	1-9/32	9/16	9/16	8-3/4 .42
1328	7/8	11/32	7/8	1-7/16	5/8	11/16	9-1/4 .56
1332	1	3/8	1	1-19/32	11/16	3/4	9-7/8 .70
1334	1-1/16	7/16	1-1/16	1-25/32	3/4	27/32	10-3/4 1.
1336	1-1/8	7/16	1-1/8	1-25/32	3/4	27/32	10-3/4 .96

SET No. WS-13R

7 Wrenches

in K-12 Roll Kit

Weight, 1.8 lbs.

These seven wrenches will handle various fittings for tube sizes as follows: 1/8", 1/4", 3/8", and 1/2".



No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
1312	3/8 & 3/8	1318	9/16 & 9/16	1322	11/16 & 11/16
1314	7/16 & 7/16	1320	5/8 & 5/8	1324	3/4 & 3/4
1316	1/2 & 1/2				

DOUBLE HEAD SPLIT BOX

†12-point opening.

Example of Order Nomenclature: "XFN-1618 WRENCH"

No.	Nominal Openings	Small End			Large End			Lgth.	Wgt. Each Lbs.
		Head Diam.	Head Thick.	Tube Clear	Head Diam.	Head Thick.	Tube Clear		
XFN-1214	3/8 & 7/16	5/16	11/32	1/4	7/16	3/8	9/32	6-1/4	.12
XFN-1618	1/2 & 9/16	31/32	3/8	3/8	13/16	7/16	7/16	7-1/2	.25
XFN-2022	5/8 & 11/16	17/64	7/16	19/32	11/16	1/2	9/16	8-1/2	.40
†XFN-2432	3/4 & 1	11/64	1/2	9/16	11/16	5/8	3/4	9-3/16	.60
†XFN-2836	7/8 & 1 1/8	11/32	9/16	13/16	13/16	27/32	27/32	9-7/8	.90

SET No. WS-14R

5 Wrenches

in K-10 Roll Kit

Weight, 2.1 lbs.

These five wrenches will handle various fittings for tube sizes as follows: 1/8", 1/4", 3/8", 1/2", and 3/4".



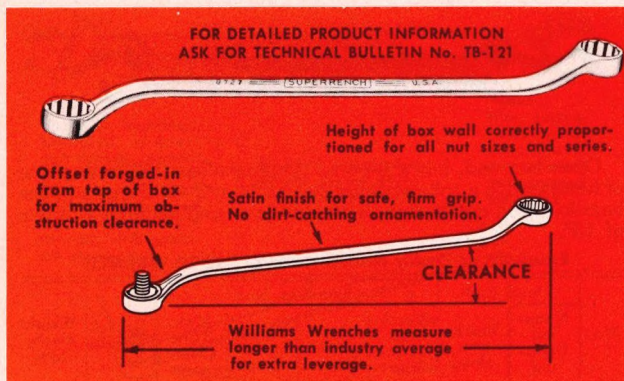
No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
XFN-1214	3/8 & 7/16	XFN-2022	5/8 & 11/16	XFN-2836	7/8 & 1-1/8
XFN-1618	1/2 & 9/16	XFN-2432	3/4 & 1		



12-POINT BOX SUPERRENCH®

SELECTED ALLOY STEEL

LONG DOUBLE OFFSET PATTERN



See Page 59 for Metric Sizes

Drop-forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, heads polished. Nos. 8040B through 8053, finished in industrial gray.

Example of Order Nomenclature: "8725B WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE 1, CLASS 2, STYLE 1.
BOX WR., DOUBLE HD., 12 POINT, DOUBLE OFFSET, REGULAR LENGTH

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each Lbs.
		Diam.	Thick.	Diam.	Thick.		
8721	5/16 & 3/8	33/64	15/64	5/8	17/64	7-1/2	.13
8723	3/8 & 7/16	37/64	1/4	21/32	9/32	7-3/4	.13
8725	13/32 & 1/2	21/32	19/64	47/64	21/64	8-1/16	.19
8725B	7/16 & 1/2	21/32	19/64	47/64	21/64	8-1/16	.21
8725A	7/16 & 9/16	21/32	5/16	53/64	21/64	8-3/8	.23
8725B	1/2 & 9/16	47/64	21/64	53/64	11/32	8-11/16	.25
8025	1/2 & 19/32	47/64	21/64	7/8	23/64	9-1/16	.23
8727	9/16 & 5/8	53/64	11/32	29/32	3/8	9-3/8	.27
8027	19/32 & 11/16	29/32	3/8	1	13/32	9-3/4	.35
8727A	5/8 & 11/16	29/32	3/8	1	13/32	9-3/4	.35
8729	5/8 & 3/4	29/32	13/32	1-5/64	7/16	10-1/8	.42
8029B	11/16 & 3/4	1	13/32	1-5/64	7/16	10-1/2	.44
8029	11/16 & 25/32	1	27/64	1-1/8	29/64	10-7/8	.50
8729A	3/4 & 25/32	1-5/64	31/64	1-11/64	33/64	11-5/8	.56
8030	11/16 & 7/8	1	7/16	1-1/4	15/32	11-1/4	.56
8731	3/4 & 13/16	1-5/64	31/64	1-11/64	33/64	11-5/8	.58
8731A	3/4 & 7/8	1-5/64	15/32	1-1/4	1/2	12	.58
8031B	25/32 & 13/16	1-1/8	31/64	1-11/64	33/64	12-1/2	.65
8031	25/32 & 7/8	1-11/64	1/2	1-1/4	17/32	12-7/8	.75
8731B	13/16 & 7/8	1-11/64	1/2	1-1/4	17/32	12-7/8	.71
8033A	7/8 & 15/16	1-1/4	17/32	1-21/64	9/16	13-3/8	1.
8733	7/8 & 1	1-1/4	9/16	1-13/32	19/32	13-7/8	1.
8033C	15/16 & 1	1-21/64	37/64	1-13/32	5/8	14-3/8	.98
8034	7/8 & 1-1/16	1-1/4	9/16	1-13/32	41/64	15	1.1
8034A	15/16 & 1-1/16	1-21/64	39/64	1-1/2	21/32	15-1/2	1.2
8735	1-1/16 & 1-1/8	1-13/32	41/64	1-9/16	43/64	16	1.3
8735A	1-1/16 & 1-1/8	1-1/2	43/64	1-9/16	23/32	16-5/8	1.4
8037	1-1/16 & 1-1/4	1-1/2	11/16	1-25/32	3/4	17-1/4	1.8
8037A	1-1/8 & 1-5/16	1-9/16	23/32	1-27/32	25/32	18	2.8
8039B	1-1/4 & 1-5/16	1-25/32	47/64	1-27/32	51/64	18-3/4	2.8
8039	1-1/4 & 1-7/16	1-25/32	3/4	2-3/64	13/16	19-1/2	2.7
8039A	1-5/16 & 1-1/2	1-27/32	25/32	2-3/32	27/32	20-1/2	2.6
8040B	1-7/16 & 1-1/2	2-11/32	1	2-11/32	1	21	6.3
8041	1-7/16 & 1-5/8	2-11/32	1	2-19/32	1-1/16	23	5.7
8742B	1-1/2 & 1-11/16	2-11/32	1	2-19/32	1-1/16	23	5.8
8045	1-13/16 & 2	2-57/64	1-1/8	3-9/64	1-1/4	25	8.5
8049	2-3/16 & 2-3/8	3-29/64	1-3/8	3-45/64	1-1/2	27	10.2
8053	2-9/16 & 2-3/4	3-29/32	1-5/8	4-5/32	1-3/4	30	14.7

SHORT DOUBLE OFFSET PATTERN



MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE 1, CLASS 2, STYLE 2.
BOX WRENCH, DOUBLE HEAD, 12 POINT, DOUBLE OFFSET

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each Lbs.
		Diam.	Thick.	Diam.	Thick.		
9723	3/8 & 7/16	45/64	21/64	13/16	11/32	4-1/2	.07
9725	7/16 & 1/2	21/32	5/16	47/64	21/64	5	.11
9725B	1/2 & 9/16	45/64	21/64	13/16	11/32	5-1/2	.22
9727	9/16 & 5/8	53/64	13/32	29/32	7/16	6	.19
9729	5/8 & 3/4	59/64	13/32	1-5/64	7/16	6-1/4	.23
9029C	11/16 & 13/16	31/32	7/16	1-7/64	1/2	6-1/2	.27

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

HEX BOX SUPERRENCH®

SELECTED ALLOY STEEL

LONG DOUBLE OFFSET PATTERN



Drop-forged from Selected Alloy Steel, heat-treated chrome-plated over nickel, heads polished.

Example of Order Nomenclature: "XX-61618 WRENCH"

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each Lbs.
		Diam.	Thick.	Diam.	Thick.		
XX-61214	3/8 & 7/16	37/64	1/4	21/32	9/32	7-3/4	.13
XX-61618	1/2 & 9/16	47/64	21/64	53/64	11/32	8-11/16	.23
XX-62024	5/8 & 3/4	29/32	13/32	1-5/64	7/16	10-1/8	.42

WILLIAMS

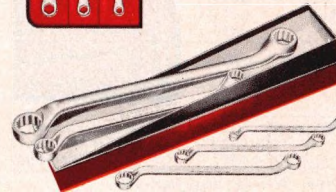
OFFSET BOX SUPERRENCH® SETS

SELECTED ALLOY STEEL

LONG DOUBLE OFFSET



SET No. WS-3R
3 Wrenches in
K-6 Roll Kit
SET No. WS-3B
In Cardboard Box
Weight, .97 lbs.



SET No. WS-8005BB
5 Wrenches In Cardboard Box
Weight, 10.5 lbs.



SET No. WS-8006AR
6 Wrenches
in K-13 Roll Kit

SET No. WS-8006AB
In Cardboard Box
Weight, 3.4 lbs.

No.	Nominal Openings	No.	Nominal Openings	No.	Nominal Openings
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SETS Nos. WS-3R and WS-3B

This set fits most new American Standard Regular and Finished Series nuts and bolt heads, hex head Cap Screws and hex Machine Screw or Stove Bolt nuts 1/4 thru 1/2".

XX-61214	3/8"x7/16"	XX-61618	1/2"x9/16"	XX-62024	5/8"x3/4"
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SET No. WS-8005BB

This set fits all new American Standard Heavy Series nuts and bolts 1/4 thru 1".

8725B	1/2"x9/16"	8033A	3/8"x1 1/16"	8041	1 1/16"x1 5/8"
8029B	1 1/16"x3/4"	8037	1 1/16"x1 1/4"		

SETS Nos. WS-8006AR and WS-8006AB

This set fits all new American Standard Regular, Heavy and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 5/8".

8723	3/8"x7/16"	8727A	5/8"x1 1/16"	8733	7/8"x1"
8725B	1/2"x9/16"	8731	3/4"x1 1/16"	8034A	1 1/16"x1 1/16"

SHORT DOUBLE OFFSET

SET No. WS-9704R
4 Wrenches
in K-5 Roll Kit



SET No. WS-9704B
4 Wrenches
In Cardboard Box
Weight, .98 lbs.

A compact set of short series double offset box wrenches with openings from 3/8" thru 1 1/16" without duplication.

No.	Nominal Openings	No.	Nominal Openings
9723	3/8"x7/16"	9729	5/8"x3/4"
9725B	1/2"x9/16"	9029C	1 1/16"x1 1/16"

**12-POINT BOX SUPERRENCH® SET**

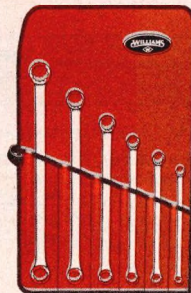
SELECTED ALLOY STEEL

LONG 15° ANGLE OFFSET PATTERN

SET No. WS-7006AR

6 Wrenches
in K-9 Roll Kit

SET No. WS-7006AB

In Cardboard Box
Weight, 2.9 lbs.

Example of Order Nomenclature: "WS-7006AR SET IN ROLL"

No.	Nominal Openings	No.	Nominal Openings
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CONTENTS SETS Nos. WS-7006AR and WS-7006AB

This set fits all new American Standard Regular and Finished Series nuts and bolts and hex head Cap Screws 1/4 thru 5/8" and Heavy Series nuts and bolts 1/4 thru 9/16".

7723	3/8 & 7/16	7031B	25/32 & 13/16
7725B	1/2 & 9/16	7731A	3/4 & 7/8
7727A	5/8 & 11/16	7033C	15/16 & 1

WILLIAMS

ELECTRONIC HEX BOX SUPERRENCH®

SELECTED ALLOY STEEL



DIFFERENT OPENING IN EACH HEAD

Ideal for electronic, carburetor and ignition work. Heat-treated, chrome-plated over nickel, heads polished.

Example of Order Nomenclature: "1151 WRENCH"

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each, Lbs.
		Diam.	Thick.	Diam.	Thick.		
1150	3/16 & 13/64	19/64	1/8	5/16	9/64	2-7/8	.02
1151	7/32 & 15/64	21/64	5/32	23/64	11/64	3-1/8	.03
1152	1/4 & 9/32	3/8	11/64	13/32	3/16	3-3/8	.04
1153	5/16 & 11/32	29/64	7/32	1/2	1/4	3-3/4	.06

WILLIAMS

ELECTRONIC HEX BOX SUPERRENCH® SET

SELECTED ALLOY STEEL

SET No. WS-1154SR

4 Wrenches in
K-1 Roll Kit

SET No. WS-1154SB

In Cardboard Box
Weight, .19 lbs.

Example of Order Nomenclature: "WS-1154SR SET IN ROLL"

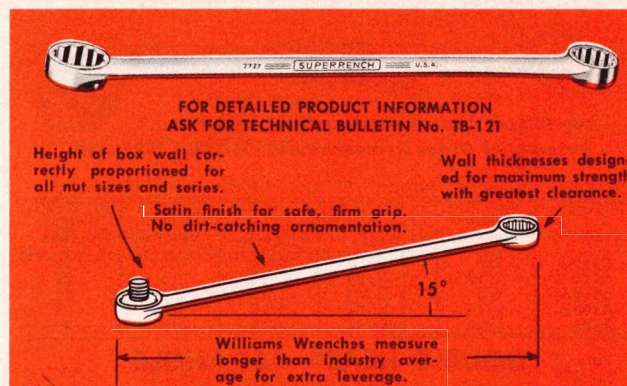
No.	Nominal Openings	No.	Nominal Openings
1150	3/16 & 13/64	1152	1/4 & 9/32
1151	7/32 & 15/64	1153	5/16 & 11/32

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

12-POINT BOX SUPERRENCH®

SELECTED ALLOY STEEL

LONG 15° ANGLE OFFSET PATTERN



Drop-forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, heads polished.

Example of Order Nomenclature: "7029 WRENCH"

MILITARY DESCRIPTION:

GGG-W-636D-5, TYPE I, CLASS 1, STYLE 1,

BOX WRENCH, DOUBLE HEAD, 12 POINT, 15°, REGULAR LENGTH

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each, Lbs.
		Diam.	Thick.	Diam.	Thick.		
7723	3/8 & 7/16	37/64	1/4	21/32	9/32	7- 3/4	.11
7023	13/32 & 1/2	21/32	19/64	47/64	21/64	8- 1/16	.17
7725	7/16 & 1/2	21/32	19/64	47/64	21/64	8- 1/16	.17
7725A	7/16 & 9/16	21/32	5/16	53/64	11/32	8- 3/8	.21
7725B	1/2 & 9/16	47/64	21/64	53/64	11/32	8-11/16	.21
7025	1/2 & 19/32	47/64	21/64	7/8	23/64	9- 1/16	.19
7727	9/16 & 5/8	53/64	11/32	29/32	3/8	9- 3/8	.25
7027	19/32 & 11/16	29/32	3/8	1	13/32	9- 3/4	.29
7727A	5/8 & 11/16	29/32	3/8	1	13/32	9- 3/4	.29
7729	5/8 & 3/4	29/32	13/32	1- 3/32	7/16	10- 1/8	.35
7029B	11/16 & 3/4	1	13/32	1- 3/32	7/16	10- 1/2	.50
7029	11/16 & 25/32	1	27/64	1- 1/8	29/64	10- 7/8	.50
7729A	3/4 & 25/32	1- 3/32	29/64	1- 1/8	31/64	11- 5/8	.48
7030	11/16 & 7/8	1	7/16	1- 1/4	15/32	11- 1/4	.67
7731A	3/4 & 7/8	1- 3/32	15/32	1- 1/4	1/2	12	.53
7031B	25/32 & 13/16	1- 1/8	31/64	1-11/64	33/64	12- 1/2	.56
7031	25/32 & 7/8	1-11/64	1/2	1- 1/4	17/32	12- 7/8	.65
7731B	13/16 & 7/8	1-11/64	1/2	1- 1/4	17/32	12- 7/8	.63
7033A	7/8 & 15/16	1- 1/4	17/32	1-21/64	9/16	13- 3/8	.71
7733	7/8 & 1	1- 1/4	9/16	1-13/32	19/32	13- 7/8	.88
7033C	15/16 & 1	1-21/64	37/64	1-13/32	5/8	14- 3/8	.90
7034	7/8 & 1- 1/16	1-11/32	19/32	1- 1/2	41/64	15	1.1
7034A	15/16 & 1- 1/16	1-21/64	39/64	1- 1/2	21/32	15- 1/2	1.2
7735	1 & 1- 1/8	1-13/32	5/8	1- 9/16	43/64	16	1.2
7735A	1-1/16 & 1- 1/8	1- 1/2	43/64	1- 9/16	23/32	16- 5/8	1.3
7037	1-1/16 & 1- 1/4	1- 1/2	11/16	1-25/32	3/4	17- 1/4	1.5
7037A	1-1/8 & 1- 5/16	1- 9/16	23/32	1-27/32	25/32	18	1.6
7039B	1-1/4 & 1- 5/16	1-25/32	47/64	1-27/32	51/64	18- 3/4	1.9
7039	1-1/4 & 1- 7/16	1-25/32	3/4	2- 3/64	13/16	19- 1/2	2.2
7039A	1-5/16 & 1- 1/2	1-27/32	25/32	2- 3/32	27/32	20- 1/2	2.3
7040B	1-7/16 & 1- 1/2	2- 3/64	13/16	2- 3/32	7/8	21- 1/2	4.7
7041	1-7/16 & 1- 5/8	2- 3/64	27/32	2- 5/16	1	22- 1/2	4.
7742B	1-1/2 & 1-11/16	2- 3/32	15/16	2-19/32	1-1/16	22- 3/4	4.4

SHORT 15° ANGLE OFFSET PATTERN

MILITARY DESCRIPTION:

GGG-W-636D-5, TYPE I, CLASS 1, STYLE 2, BOX WRENCH, DOUBLE HEAD, 12 POINT, 15°, SHORT LENGTH

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each, Lbs.
		Diam.	Thick.	Diam.	Thick.		
6723	3/8 & 7/16	19/32	19/64	11/16	5/16	4-1/2	.08
6725	7/16 & 1/2	43/64	5/16	3/4	21/64	5-1/2	.11
6725A	7/16 & 9/16	23/32	23/64	7/8	3/8	5-1/2	.14
6725B	1/2 & 9/16	23/32	23/64	7/8	3/8	5-1/2	.14
6025	1/2 & 19/32	23/32	23/64	7/8	3/8	5-1/2	.14
6727	9/16 & 5/8	13/16	13/32	29/32	7/16	6	.18

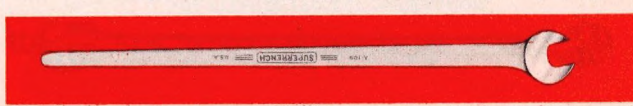
INDUSTRIAL WRENCHES, TOOLS



FORGINGS AND EXTRUSIONS

TAPPET SUPERRENCH®

SINGLE HEAD—15° ANGLE—EXTRA LONG



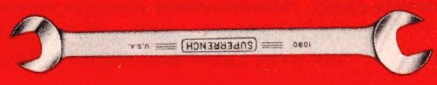
Drop-forged, heat-treated and chrome-plated.

Example of Order Nomenclature: "A-100A WRENCH"

MILITARY DESCRIPTION: 66G-W-636D-5, TYPE X, CL. 2, TAP. WR., SINGLE SPEAR HD., OPEN END, 15°

No.	Nominal Opening	Head		Overall Length	Ea., Lbs.
		Width	Thickness		
A100C	3/8	1-21/64	3/16	15	.32
A100	7/16	1-21/64	3/16	15	.32
A100A	1/2	1-21/64	3/16	15	.32
A100B	9/16	1-21/64	3/16	15	.32
A101	5/8	1-29/64	3/16	15	.36

DOUBLE HEAD—15° ANGLE



MILITARY DESCRIPTION: 66G-W-636D-5, TYPE X, CL. 1, TAP. WR., DBLE. SPEAR HD., OPEN END, 15°

No.	Nominal Opening	Small Head		Large Head		Overall Length	Ea., Lbs.
		Width	Thickness	Width	Thickness		
1090A	3/8 & 7/16	1-1/4	5/32	1-5/16	5/32	19	.19
1090	7/16 & 1/2	1-1/4	5/32	1-5/16	5/32	19	.19
1090C	7/16 & 1/2	1-1/4	5/32	1-5/16	5/32	19	.19
1090D	1/2 & 9/16	1-1/4	5/32	1-5/16	5/32	19	.19
1092	9/16 & 5/8	1-1/4	5/32	1-5/16	5/32	19	.19
1092C	5/8 & 11/16	1-1/4	5/32	1-5/16	5/32	19	.19
1094C	3/4 & 13/16	1-19/32	7/32	1-3/4	7/32	19	.34
1094	3/4 & 7/8	1-19/32	7/32	1-3/4	7/32	19	.41
1096H	7/8 & 1-1/16	1-27/32	7/32	1-15/16	7/32	19	.41
1096	15/16 & 1	1-27/32	7/32	1-15/16	7/32	19	.41



See Page 59 for Metric Sizes

Made from selected steel. All critical parts are heat-treated for lasting service and safety. Chrome-plated over nickel.

Example of Order Nomenclature: "RB-1618 WRENCH"

MILITARY DESCRIPTION: 66G-W-001405-1, WRENCH, BOX, RATCHETING

No.	Nominal Opening	Small Head		Large Head		Overall Length	Ea., Lbs.
		Diam.	Thick.	Diam.	Thick.		
RB-810	1/4 & 5/16	6 Pt.	19/32	3/8	5/8	13	.13
RB-1214	3/8 & 7/16	6 Pt.	23/32	3/8	5/8	13	.19
RB-1618	1/2 & 9/16	6 Pt.	1	1/2	1-1/8	13	.42
RB-1820	9/16 & 5/8	12 Pt.	1-5/16	1/2	1-3/8	13	.67
RB-2022	5/8 & 11/16	12 Pt.	1-9/32	1/2	1-7/16	13	.67
RB-2428	3/4 & 7/8	12 Pt.	1-13/32	1/2	1-9/16	13	.75

SET
3 Wrenches
in K-4 Roll Kit
Weight, .75 lbs.



SET
6 Wrenches
in K-10 Roll Kit
Weight, 2.9 lbs.



No.	Nom. Opngs.	No.	Nom. Opngs.	No.	Nom. Opngs.
RB-810	1/4 & 5/16	RB-1214	3/8 & 7/16	RB-1618	1/2 & 9/16
CONTENTS—SET No. WS-11R					
RB-810	1/4 & 5/16	RB-1214	3/8 & 7/16	RB-1618	1/2 & 9/16
CONTENTS—SET No. WS-12R					
RB-810	1/4 & 5/16	RB-1214	3/8 & 7/16	RB-2428	5/8 & 11/16
RB-1214	3/8 & 7/16	RB-2428	5/8 & 11/16	RB-2024	3/4 & 3/4

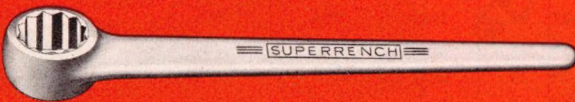
12-POINT BOX SUPERRENCH®SELECTED ALLOY STEEL
REGULAR PATTERN

These Superrenches will rotate hex nuts where the wrench can be swung only 15°. Drop-forged and heat-treated. Chrome-plated over nickel, heads polished. Handle can be bent above head at angles of 45° to 90° from opening, at an additional charge.

Example of Order Nomenclature: "1805A WRENCH"

No.	Nominal Opening	Head		Overall Length	Weight Each, Lbs.
		Diameter	Thickness		
1800A	7/16	45/64	7/32	3-1/2	.07
1801	1/2	27/32	17/64	4	.11
1802A	9/16	61/64	5/16	4-7/8	.19
1803A	5/8	1- 3/32	23/64	5-7/8	.31
1803	11/16	1- 3/32	23/64	5-7/8	.31
1804A	3/4	1- 1/4	13/32	6-7/8	.36
1805A	13/16	1-23/64	29/64	7-3/4	.45
1805	7/8	1-23/64	29/64	7-3/4	.45
1806	15/16	1-35/64	1/2	8-3/4	.68
1806B	1	1-35/64	1/2	8-3/4	.68
1807	1- 1/16	1-25/32	9/16	9-7/8	.89
1807A	1- 1/8	1-25/32	9/16	9-7/8	.89
1808	1- 1/4	2- 1/16	9/16	11-1/2	1.5
1808A	1- 5/16	2- 1/16	9/16	11-1/2	1.5
1809	1- 7/16	2- 3/8	21/32	13-3/8	1.9
1809A	1- 1/2	2- 3/8	21/32	13-3/8	1.9
1810	1- 5/8	2- 5/8	3/4	15-1/4	2.9
1810A	1-11/16	2- 5/8	3/4	15-1/4	2.9
1811	1-13/16	2-29/32	13/16	17	3.1
1811A	1- 7/8	2-29/32	13/16	17	3.1
1812	2	3- 1/4	15/16	19	4.3

WILLIAMS

12-POINT BOX SUPERRENCH®SELECTED ALLOY STEEL
HEAVY PATTERN

These Superrenches will rotate hex nuts where the wrench can be swung only 15°. Drop-forged and heat-treated. Chrome-plated over nickel, heads polished. Handle can be bent above head at angles of 45° to 90° from opening, at an additional charge.

Example of Order Nomenclature: "H-1810A WRENCH"

No.	Nominal Opening	Head		Overall Length	Weight Each, Lbs.
		Diameter	Thickness		
H-1808	1- 1/4	2- 1/16	13/16	11-1/2	1.6
H-1808A	1- 5/16	2- 1/16	13/16	11-1/2	1.6
H-1809	1- 7/16	2- 3/8	15/16	13-3/8	2.3
H-1809A	1- 1/2	2- 3/8	15/16	13-3/8	2.3
H-1810	1- 5/8	2- 5/8	1-1/8	15-1/4	3.1
H-1810A	1-11/16	2- 5/8	1-1/8	15-1/4	3.1
H-1811	1-13/16	2-15/16	1-1/4	17	3.8
H-1811A	1- 7/8	2-15/16	1-1/4	17	3.8
H-1812	2	3- 1/4	1-3/8	19	5.4
H-1813	2- 3/16	3- 1/2	1-1/2	21	6.5
H-1813A	2- 1/4	3- 1/2	1-1/2	21	6.5
H-1814	2- 3/8	3- 3/4	1-5/8	23	7.8
H-1815	2- 9/16	4- 1/8	1-3/4	25	10.3
H-1815A	2- 5/8	4- 1/8	1-3/4	25	10.3
H-1816	2- 3/4	4- 9/16	1-7/8	27	12.5
H-1817A	3	4-13/16	2	30	16.3
H-1817	3- 1/8	4-13/16	2	30	16.3

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

STRIKING FACE BOX SUPERRENCH®SELECTED ALLOY STEEL
OFFSET PATTERN—12-POINT OPENINGS

For heavy work where large nuts must be set up tight or frozen nuts loosened. Offset head gives ample nut clearance.

Drop-forged and heat-treated to withstand the necessary shocks. Finished in industrial gray.

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE XII, STRIKING WRENCH, 12 POINT BOX

No.	Nominal Opening	Head		Overall Length	Weight Each, Lbs.
		Diameter	Thickness		
8807	1- 1/16	1-11/16	13/16	10	2.1
8807A	1- 1/8	1-11/16	13/16	10	2.1
8808	1- 1/4	2- 1/16	7/8	11	2.5
8808A	1- 5/16	2- 1/16	7/8	11	2.5
8809	1- 7/16	2- 1/4	1	11-1/2	3.5
8809A	1- 1/2	2- 1/4	1	11-1/2	3.5
8810	1- 5/8	2- 9/16	1-1/16	12	4.5
8810A	1-11/16	2- 9/16	1-1/16	12	4.4
8811B	1- 3/4	2-13/16	1-1/8	12-1/2	5.8
8811	1-13/16	2-13/16	1-1/8	12-1/2	5.6
8811A	1- 7/8	2-13/16	1-1/8	12-1/2	5.4
8812A	1-15/16	3- 1/8	1-1/4	13-1/2	6.8
8812	2	3- 1/8	1-1/4	13-1/2	6.5
8813B	2- 1/8	3-15/16	1-3/8	14-3/8	9.
8813	2- 3/16	3-15/32	1-3/8	14-3/8	8.8
8813A	2- 1/4	3-15/32	1-3/8	14-3/8	8.8
8814A	2- 5/16	3-23/32	1-1/2	14	9.7
8814	2- 3/8	3-23/32	1-1/2	14	9.5
8815B	2- 1/2	3-29/32	1-5/8	14-1/2	10.6
8815	2- 9/16	3-29/32	1-5/8	14-1/2	10.4
8815A	2- 5/8	3-29/32	1-5/8	14-1/2	10.4
8816	2- 3/4	4- 5/32	1-3/4	15	11.5
8816C	2- 7/8	4-21/32	1-7/8	16	15.3
8816B	2-15/16	4-21/32	1-7/8	16	15.
8817A	3	4-15/16	2	16-1/2	18.4
8817	3- 1/8	4-15/16	2	16-1/2	17.8

STRIKING FACE BOX SUPERRENCH®

STRAIGHT PATTERN—12-POINT OPENINGS



Heads are approximately as thick as the nuts they handle. Drop-forged and heat-treated. Finished in industrial gray.

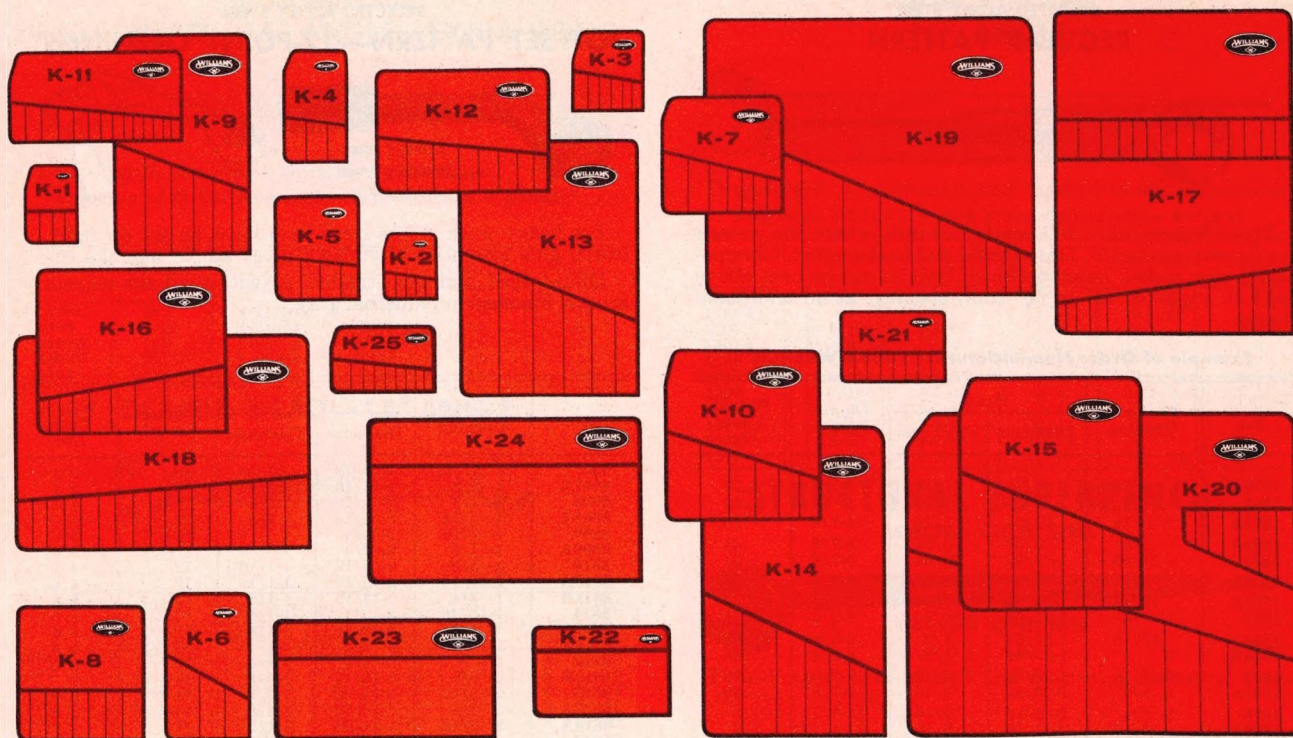
MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE XI, STYLE 1, SLUGGING WR., SHORT L'GTH, 12 PT. BOX
GGG-W-636D-5, TYPE XI, STYLE 2, SLUGGING WR., LONG L'GTH, 12 PT. BOX

No.	Nominal Opening	Head		Overall Length	Weight Each, Lbs.
		Diameter	Thickness		
SFH-1808	1- 1/4	2- 3/16	13/16	7	1.4
SFH-1808A	1- 5/16	2- 3/16	13/16	7	1.4
SFH-1809	1- 7/16	2- 5/16	1	8-1/4	2.1
SFH-1809A	1- 1/2	2- 5/16	1	8-1/4	2.1
SFH-1810	1- 5/8	2- 5/8	1- 1/8	9	3.
SFH-1810A	1-11/16	2- 5/8	1- 1/8	9	3.
SFH-1811	1-13/16	2-15/16	1- 1/4	10	3.9
SFH-1811A	1- 7/8	2-15/16	1- 1/4	10	3.9
SFH-1812	2	3- 1/2	1- 3/8	11	5.5
SFH-1813	2- 3/16	3- 1/2	1- 3/8	11	5.5
SFH-1813A	2- 1/4	3- 1/2	1- 3/8	11	5.5
SFH-1814	2- 3/8	4- 1/8	1- 5/8	13	9.1
SFH-1815	2- 9/16	4- 1/8	1- 5/8	13	9.1
SFH-1815A	2- 5/8	4- 1/8	1- 5/8	13	9.1
SFH-1816	2- 3/4	4- 3/4	1- 7/8	15-1/2	14.6
SFH-1817A	3	4- 3/4	1- 7/8	15-1/2	14.6
SFH-1817	3- 1/8	4- 3/4	1- 7/8	15-1/2	14.6
SFH-1818A	3- 3/8	5- 1/4	2	17-1/4	18.9
SFH-1818	3- 1/2	5- 1/4	2	17-1/4	18.9
SFH-1819B	3- 3/4	5- 7/8	2- 1/4	18	23.1
SFH-1819	3- 7/8	5- 7/8	2- 1/4	18	23.1
SFH-1819C	4- 1/8	6- 3/8	2- 7/16	19	27.7
SFH-1819A	4- 1/4	6- 3/8	2- 7/16	19	27.7
SFH-1820B	4- 1/2	7	2- 3/4	20	34.1
SFH-1820	4- 5/8	7	2- 3/4	20	34.1



VINYL COATED LEATHERETTE ROLL KITS

1 ALLOY WRENCHES AND SETS



The tough, flexible material used in Williams roll kits is made up of a spun rayon cloth which is coated both sides and through the material with a special vinyl coating that is highly grease and oil resistant. All pockets and trim are stitched for

greatest strength. Pockets will not tear as do some heat-sealed kits. Cloth ties provided on all kits. Single pocket kits K-22, K-23, K-24 are ideal for special tool sets.

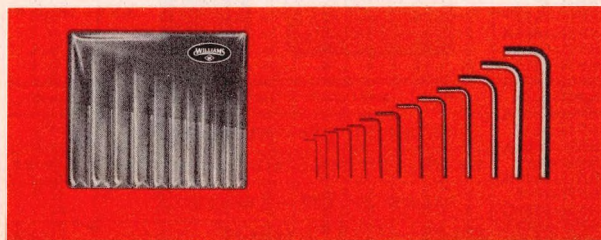
Example of Order Nomenclature: "K-17 KIT ONLY"

No.	No. Pockets	Dimensions		Used for Sets Nos.
		Width	Height	
K-1	4	4 $\frac{3}{8}$	6	WS-1154SR
K-2	5	4 $\frac{3}{8}$	6	WS-1149R
K-3	6	5 $\frac{3}{8}$	7	WS-22R, WS-1149PR
K-4	3	5 $\frac{1}{8}$	9 $\frac{1}{2}$	WS-5R, WS-11R
K-5	4	7 $\frac{1}{2}$	9 $\frac{1}{2}$	CCS-4R, CDS-4R, CRS-4R, PS-4R, WS-7R, WS-50R, WS-9704R
K-6	3	7 $\frac{1}{4}$	12	WS-3R, WS-4R, WS-8R
K-7	7	10 $\frac{1}{8}$	12 $\frac{7}{8}$	WS-1173SR
K-8	8	11	13 $\frac{3}{8}$	CS-8R
K-9	6	11 $\frac{1}{4}$	18 $\frac{7}{8}$	WS-7006AR
K-10	6	12 $\frac{3}{4}$	16	WS-12R, WS-14R, WS-25BR, WS-1005AR, WS-1025BR
K-11	14	14 $\frac{3}{8}$	7 $\frac{1}{2}$	WS-1142PR
K-12	8	14 $\frac{1}{4}$	10 $\frac{1}{8}$	WS-13R, WS-23R, WS-51R

No.	No. Pockets	Dimensions		Used for Sets Nos.
		Width	Height	
K-13	6	14 $\frac{1}{2}$	19	WS-21R, WS-24R, WS-8006AR
K-14	7	14 $\frac{7}{8}$	25 $\frac{1}{2}$	WS-1171AR
K-15	8	15	17 $\frac{1}{2}$	WS-1R, WS-26R, WS-1170AR
K-16	9	15 $\frac{3}{8}$	13 $\frac{3}{8}$	CS-9R, WS-20R
K-17	26	19 $\frac{3}{8}$	27 $\frac{3}{4}$	PC-26R
K-18	17	23 $\frac{1}{2}$	17 $\frac{1}{2}$	PS-17R
K-19	11	26 $\frac{1}{4}$	22	WS-1712AR
K-20	18	32	25 $\frac{7}{8}$	WS-1172SR
K-21	8	9	6	WS-1148R
K-22	1	11 $\frac{1}{2}$	7	Special Sets
K-23	1	18	10 $\frac{1}{2}$	Special Sets
K-24	1	22 $\frac{1}{2}$	14	Special Sets
K-25	9	8 $\frac{1}{2}$	6	WS-2R

WILLIAMS
HEX KEY WRENCH SET

SELECTED STEEL



SET No. WS-44A

SET No. WS-44A

13 Wrenches in Plastic Kit-Weight, .56 lb.

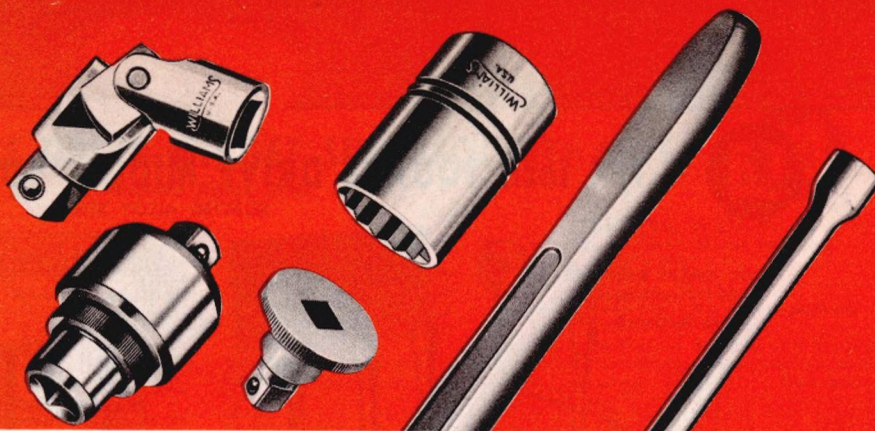
Hex key wrenches in this set are accurately made from selected steel, cadmium plated.

MILITARY DESCRIPTION: GGG-W-652-4, TYPE I, CLASS A

Hex Size	Description	Hex Size	Description
.050"	Hex Wrench, 1 $\frac{3}{4}$ " long	.552"	Hex Wrench, 2 $\frac{1}{2}$ " long
.116"	Hex Wrench, 1 $\frac{1}{2}$ " long	.562"	Hex Wrench, 2 $\frac{3}{4}$ " long
.146"	Hex Wrench, 1 $\frac{1}{8}$ " long	.572"	Hex Wrench, 3" long
.164"	Hex Wrench, 1 $\frac{1}{4}$ " long	.582"	Hex Wrench, 3 $\frac{1}{4}$ " long
.182"	Hex Wrench, 1 $\frac{1}{2}$ " long	.592"	Hex Wrench, 3 $\frac{1}{2}$ " long
.200"	Hex Wrench, 2" long	.602"	Hex Wrench, 3 $\frac{3}{4}$ " long
.216"	Hex Wrench, 2 $\frac{1}{4}$ " long	.612"	Hex Wrench, 4" long
.232"	Hex Wrench, 2 $\frac{1}{2}$ " long	.622"	Hex Wrench, 4 $\frac{1}{4}$ " long
.250"	Hex Wrench, 2 $\frac{3}{4}$ " long		
.266"	Hex Wrench, 3" long		

**FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS**

Ask for Technical Bulletin TB-122 which covers design features, quality ratchet and socket manufacture and competitive comparisons of Williams Superratchets and Supersockets. TB-106B covers design and construction features of Williams Tool Chests and Roller Cabinets.



2 ALLOY SOCKETS AND SETS

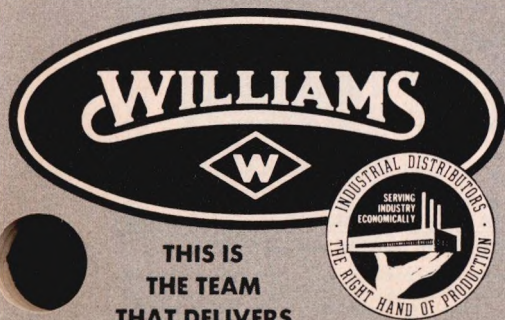
Section 2 ALLOY SOCKETS and SETS

**SAFETY
TIP**

When using adapters, avoid exceeding the strength of sockets in adapting down to smaller drive sizes, or exceeding driver limits when adapting up to larger drive sizes. Never adapt more than to the next drive size.

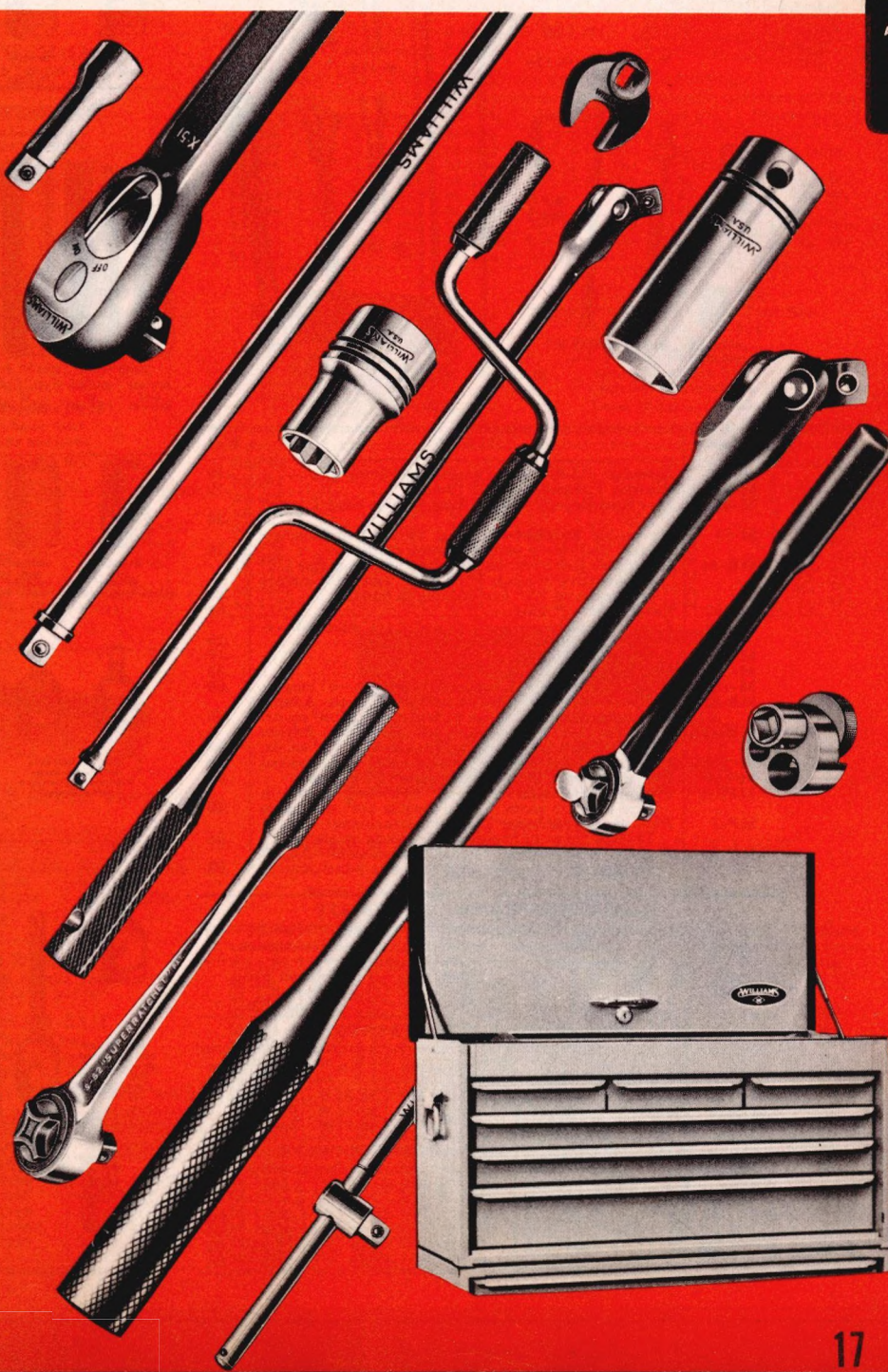
WARNING

Williams Supersockets in all drive sizes are designed for hand operation and should not be used on power drive or impact wrenches. Such misuse of these sockets will nullify the Williams guarantee.



TOOLPOWER

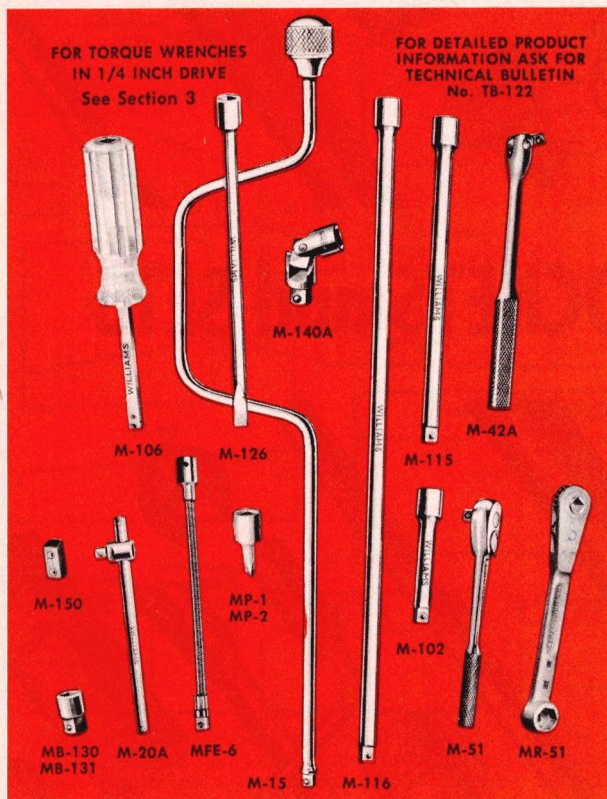
WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE



1/4"

1/4 Inch SQUARE DRIVE MIDGET SUPER SOCKET® WRENCHES

SELECTED ALLOY STEEL

FOR TORQUE WRENCHES
IN 1/4 INCH DRIVE
See Section 3FOR DETAILED PRODUCT
INFORMATION ASK FOR
TECHNICAL BULLETIN
No. TB-122

MILITARY DESCRIPTION: GGG-W-641D-3

No.	PIECE	Wgt.
M-15	Speeder—15-3/4" long; knurled revolving grip.....	.59
M-20A	Sliding T Handle—4-1/2" long.....	.10
M-42A	Flex Handle only—5-3/4" long; flexible head, knurled grip.....	.25
M-51	Reversible Ratchet—5" long, 24 teeth in Ratchet-gear. Shift-lever reverses action instantly.....	.16
MR-51	Reversible Refrigeration Ratchet—6" long. Has 1/4" female drive in head; 5/16", 1/4", and 3/16" square openings and 1/2" hex opening in handle.....	.29
M-102	Extension—2" long.....	.06
M-106	Spinner Handle has plastic grip with 1/4" square drive-opening in end—6" long.....	.19
M-115	Extension—6" long.....	.17
M-116	Extension—14" long.....	.35
M-126	Regular Screwdriver Socket Attachment—6" long..	.09
MB-130	Adapter—1/4" sq. female and 3/8" sq. male. Adapts Handles with 1/4" sq. dr. to Sockets with 3/8" sq. dr.	.05
MB-131	Adapter—1/4" sq. male and 3/8" sq. female. Adapts Sockets with 1/4" sq. dr. to Handles with 3/8" sq. dr.	.05
M-140A	Universal Joint—Spring tension holds angle desired Plug Adapter 3/4" long; both ends 1/4" sq. male....	.04
M-150	Flexible Extension—6" long. Extremely useful in hard to reach spots. Strong flexible 1/4" dia. cable	.02
MFE-6	Phillips Drive to fit screws No. 4 and smaller.....	.10
MP-1	Phillips Screwdriver Socket Attachment—No. 1 Phillips Drive to fit screws No. 4 and smaller.....	.02
MP-2	Phillips Screwdriver Socket Attachment—No. 2 Phillips Drive to fit screws Nos. 5 to 9 inclusive....	.03

M-42RK FLEX HANDLE REPAIR KIT

Qty.	No.	Description
1	M-42-1	Drive Tang
1	M-42-2	Spring
1	M-42-3	Hinge Pin

M-51 RATCHET REPAIR PARTS

No.	Description	No.	Description	No.	Description
M-51-1	Ring	M-51-4	Bearing Pin	M-51-7	Bolt Pin
M-51-2	Gear	M-51-5	Spring	M-51-8	Plunger
M-51-3	Dog	M-51-6	Bolt	M-51-W	Spanner

UNIVERSAL 6-POINT SOCKETS

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
5/16	MU-610	29/64	1/4	1-1/4	.05
3/8	MU-612	17/32	9/32	1-9/32	.05
7/16	MU-614	39/64	5/16	1-11/32	.06
1/2	MU-616	43/64	11/32	1-7/16	.06

Extruded from Alloy Steel, heat-treated and chrome-plated.

REGULAR 6-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 1, STYLE A

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/8	M-604	15/64	5/32	27/32	.01
5/32	M-605	17/64	3/16	27/32	.01
3/16	M-606	19/64	3/16	27/32	.01
7/32	M-607	21/64	3/16	27/32	.02
1/4	M-608	3/8	7/32	27/32	.02
9/32	M-609	13/32	7/32	27/32	.02
5/16	M-610	7/16	1/4	27/32	.02
11/32	M-611	1/2	9/32	27/32	.03
3/8	M-612	17/32	9/32	27/32	.03
7/16	M-614	39/64	5/16	27/32	.04
1/2	M-616	11/16	11/32	27/32	.05
9/16	M-618	3/4	3/8	27/32	.08

REGULAR 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE A

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/4	M-1208	3/8	7/32	27/32	.02
5/16	M-1210	7/16	1/4	27/32	.02
11/32	M-1211	31/64	9/32	27/32	.03
3/8	M-1212	17/32	9/32	27/32	.03
7/16	M-1214	39/64	5/16	27/32	.04
1/2	M-1216	43/64	11/32	27/32	.05
9/16	M-1218	3/4	3/8	27/32	.08

EXTRA DEEP 6-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 1, STYLE B

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/8	MD-604	15/64	5/32	2	.03
5/32	MD-605	17/64	3/16	2	.03
3/16	MD-606	19/64	3/16	2	.03
1/4	MD-608	23/64	7/32	2	.04
9/32	MD-609	13/32	7/32	2	.04
5/16	MD-610	29/64	1/4	2	.04
11/32	MD-611	31/64	9/32	2	.05
3/8	MD-612	17/32	9/32	2	.06
7/16	MD-614	39/64	5/16	2	.08
1/2	MD-616	43/64	11/32	2	.09
9/16	MD-618	3/4	3/8	2	.10

EXTRA DEEP 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE B

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
5/16	MD-1210	29/64	1/4	2	.04
11/32	MD-1211	31/64	9/32	2	.05
3/8	MD-1212	17/32	9/32	2	.06
7/16	MD-1214	39/64	5/16	2	.08
1/2	MD-1216	43/64	11/32	2	.09
9/16	MD-1218	3/4	3/8	2	.10

REGULAR 4 AND 8-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 3


Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
3/16	M-406	7/16	3/16	27/32	.03
7/32	M-407	15/32	3/16	27/32	.03
1/4	M-408	1/2	7/32	27/32	.03
5/16	M-810	9/16	1/4	27/32	.03
3/8	M-812	43/64	9/32	27/32	.05

HEX BIT SOCKETS WITH SCREWDRIVER BITS

No.	Bit Size	Length	Diam.	Wgt.
WITH SLOTTED SCREW BITS				
MA-10-1S	3/16 x .032	2- 1/16	5/8	.09
MA-10-2S	7/32 x .040	2- 1/16	5/8	.09
MA-10-3S	9/32 x .045	2- 1/16	5/8	.09
MA-10-4S	5/16 x .055	2- 1/16	5/8	.09
WITH PHILLIP SCREW BITS				
MA-10-1P	No. 1	1-13/16	5/8	.09
MA-10-2P	No. 2	1-13/16	5/8	.09
MA-10-3P	No. 3	1-13/16	5/8	.09
MA-10-4P	No. 4	1-13/16	5/8	.09

HEX BIT SOCKETS WITH BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A



Sockets and bits furnished disassembled. Key wrench not included.

Bit Size	WITH SHORT BIT			WITH LONG BIT			Skt. Diam.
	No.	Lgth.	Wgt.	No.	Lgth.	Wgt.	
.050	MA-050	1-11/16	.04	MA-050L	2-3/4	.04	1/2
1/16	MA-2	1-11/16	.04	MA-2L	2-3/4	.04	1/2
5/64	MA-2½	1-11/16	.04	MA-2½L	2-3/4	.04	1/2
3/32	MA-3	1-11/16	.04	MA-3L	2-3/4	.04	1/2
7/64	MA-3½	1-11/16	.04	MA-3½L	2-3/4	.04	1/2
1/8	MA-4	1- 3/4	.04	MA-4L	3-5/8	.04	1/2
9/64	MA-4½	1- 3/4	.04	MA-4½L	3-5/8	.05	1/2
5/32	MA-5	1- 3/4	.05	MA-5L	3-5/8	.06	1/2
3/16	MA-6	1- 3/4	.07	MA-6L	3-5/8	.09	9/16
7/32	MA-7	1- 3/4	.07	MA-7L	3-5/8	.09	9/16
1/4	MA-8	1-13/16	.08	MA-8L	4-9/16	.12	5/8
5/16	MA-10	1-13/16	.09	MA-10L	4-9/16	.16	5/8

HOLLOW SCREW SOCKET BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A

Bit No.	Hex Plug Size	For Hollow Screws	Wgt.
		Set Screw	Cap Screw
AM-604	1/8	1/8	No. 10
AM-605	5/32	5/16	1/4
AM-606	3/16	3/8	1/4
AM-607	7/32	7/16	1/4

FOR INDUSTRIAL BLACK FINISH RATCHETS AND DRIVERS SEE PAGE 74.



1/4 Inch SQUARE DRIVE MIDGET SUPERSOCKET® SETS

SELECTED ALLOY STEEL

1/4"

HEXAGON BITS

SLOTTED SCREW BITS

No.	Tip Size	Lgth.	Wgt.
ASB-1	3/16 x .032	1-1/2	.03
ASB-2	7/32 x .040	1-1/2	.03
ASB-3	9/32 x .045	1-1/2	.03
ASB-4	5/16 x .055	1-1/2	.03

PHILLIPS SCREW BITS

No.	Bit Size	Lgth.	Wgt.
APB-1	No. 1	1-1/4	.03
APB-2	No. 2	1-1/4	.03
APB-3	No. 3	1-1/4	.03
APB-4	No. 4	1-1/4	.03

SHORT HEX BITS

No.	Hex	Lgth.	Wgt.
A-050	.050	1-1/16	.002
A-2	1/16	1-1/16	.002
A-2½	5/64	1-1/16	.003
A-3	3/32	1-1/16	.003
A-3½	7/64	1-1/16	.005
A-4	1/8	1-1/8	.006
A-4½	9/64	1-1/8	.009
A-5	5/32	1-1/8	.01
A-6	3/16	1-1/8	.01
A-7	7/32	1-1/8	.01
A-8	1/4	1-1/4	.02
A-10	5/16	1-1/4	.03

LONG HEX BITS

No.	Hex	Lgth.	Wgt.
A-050L	.050	2-1/8	.004
A-2L	1/16	2-1/8	.004
A-2½L	5/64	2-1/8	.006
A-3L	3/32	2-1/8	.006
A-3½L	7/64	2-1/8	.01
A-4L	1/8	3	.01
A-4½L	9/64	3	.02
A-5L	5/32	3	.02
A-6L	3/16	3	.03
A-7L	7/32	3	.04
A-8L	1/4	4	.06
A-10L	5/16	4	.10

SET No. WSM-1A

14 Tools in TB-1A Metal Tool Box
9-1/4" x 2-1/4" x 1-1/4"

SET No. WSM-1AH

Same as above but with all hex sockets
Total Weight, 1.5 lbs.

Make any size nut driver by attaching socket to M-106 Handle.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-604	1/8" 6 Pt. Skt	M-609	3/32" 6 Pt. Skt	M-1216	1/2" 12 Pt. Skt
M-605	3/32" 6 Pt. Skt	M-1210	5/16" 12 Pt. Skt	M-1218	9/16" 12 Pt. Skt
M-606	3/16" 6 Pt. Skt	M-1211	11/32" 12 Pt. Skt	M-20A	Sliding Tee
M-607	7/32" 6 Pt. Skt	M-1212	3/8" 12 Pt. Skt	M-106	Spinner Hdle
M-608	1/4" 6 Pt. Skt	M-1214	7/16" 12 Pt. Skt		

SET No. WSM-2A

16 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"

SET No. WSM-2AH

Same as above but with all hex sockets
Total Weight, 2.1 lbs.

This is an extremely flexible set for its size. M-106 Handle can be used as a nut driver or extension for M-51 Ratchet.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-604	1/8" 6 Pt. Skt	M-1210	5/16" 12 Pt. Skt	M-20A	Sliding Tee
M-605	3/32" 6 Pt. Skt	M-1211	11/32" 12 Pt. Skt	M-51	Ratchet
M-606	3/16" 6 Pt. Skt	M-1212	3/8" 12 Pt. Skt	M-106	Spinner Hdle
M-607	7/32" 6 Pt. Skt	M-1214	7/16" 12 Pt. Skt	PL-1519	Pliers
M-608	1/4" 6 Pt. Skt	M-1216	1/2" 12 Pt. Skt		
M-609	3/32" 6 Pt. Skt	M-1218	9/16" 12 Pt. Skt		

SET No. WSM-3B

13 Tools in TB-1B Metal Tool Box
9-1/4" x 2-1/4" x 1-1/4"

SET No. WSM-3BH

Same as above but with all hex sockets
Total Weight, 1.9 lbs.

For nut drivers attach deep sockets to M-106 Handle which can also be used as an extension with M-51 Ratchet.

One Ea.	Description	One Ea.	Description	One Ea.	Description
MD-604	1/8" 6 Pt. Dp	MD-1210	5/16" 12 Pt. Dp	MD-1218	9/16" 12 Pt. Dp
MD-605	3/32" 6 Pt. Dp	MD-1211	11/32" 12 Pt. Dp	M-51	Ratchet
MD-606	3/16" 6 Pt. Dp	MD-1212	3/8" 12 Pt. Dp	M-106	Spinner Hdle
MD-608	1/4" 6 Pt. Dp	MD-1214	7/16" 12 Pt. Dp		
MD-609	3/32" 6 Pt. Dp	MD-1216	1/2" 12 Pt. Dp		

SET No. WSM-5A

20 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"

SET No. WSM-5AH

Same as above but with all hex sockets
Total Weight, 2.1 lbs.

A wide range of instrument and electrical work can be done with these midget wrenches, pliers, sockets and drivers.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-604	1/8" 6 Pt. Skt	M-1211	11/32" 12 Pt. Skt	PL-1519	Pliers
M-605	3/32" 6 Pt. Skt	M-1212	3/8" 12 Pt. Skt		
M-606	3/16" 6 Pt. Skt	M-1214	7/16" 12 Pt. Skt		
M-607	7/32" 6 Pt. Skt	M-1216	1/2" 12 Pt. Skt		
M-608	1/4" 6 Pt. Skt	M-1218	9/16" 12 Pt. Skt		
M-609	3/32" 6 Pt. Skt	M-20A	Sliding Tee		
M-1210	5/16" 12 Pt. Skt	M-106	Spinner Hdle		

SET No. WSM-9
21 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"

SET No. WSM-9H

Same as above but with all hex sockets
Total Weight, 2.3 lbs.

A popular selection of sockets and drivers.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-606	3/16" 6 Pt. Skt.	M-1214	7/16" 12 Pt. Skt.	MD-1214	7/16" 12 Pt. Dp.
M-607	7/32" 6 Pt. Skt.	M-1216	1/2" 12 Pt. Skt.	MD-1216	1/2" 12 Pt. Dp.
M-608	1/4" 6 Pt. Skt.	MD-606	3/16" 6 Pt. Dp.	M-51	Ratchet
M-609	9/32" 6 Pt. Skt.	MD-608	1/4" 6 Pt. Dp.	M-102	2" Ext.
M-1210	5/16" 12 Pt. Skt.	MD-1210	5/16" 12 Pt. Dp.	M-106	Spinner Hdle.
M-1211	11/32" 12 Pt. Skt.	MD-1211	11/32" 12 Pt. Dp.	M-42A	Flex Hdle.
M-1212	3/8" 12 Pt. Skt.	MD-1212	3/8" 12 Pt. Dp.	M-140A	Univ. Jt.

SET No. WSM-6A

26 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"

SET No. WSM-6AH

Same set with hex in place of 12 Pt. Sockets
Total Weight, 2.4 lbs.

Tackle any nut turning problems up to 9/16" opening.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-406	3/16" 4 Pt. Skt	M-810	5/16" 8 Pt. Skt	M-51	Ratchet
M-407	3/32" 4 Pt. Skt	M-812	3/8" 8 Pt. Skt	M-106	Spinner Hdle.
M-408	1/4" 4 Pt. Skt	M-1210	5/16" 12 Pt. Skt	PL-1519	Pliers
M-604	1/8" 6 Pt. Skt	M-1211	11/32" 12 Pt. Skt		
M-605	3/32" 6 Pt. Skt	M-1212	3/8" 12 Pt. Skt		
M-606	3/16" 6 Pt. Skt	M-1214	7/16" 12 Pt. Skt		
M-607	7/32" 6 Pt. Skt	M-1216	1/2" 12 Pt. Skt		
M-608	1/4" 6 Pt. Skt	M-1218	9/16" 12 Pt. Skt		
M-609	3/32" 6 Pt. Skt	M-20A	Sliding Tee		

SET No. WSM-7B

27 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"

SET No. WSM-7BH

Same as above but with all hex sockets
Total Weight, 2.5 lbs.

Make nut drivers or tee handle wrenches.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-604	1/8" 6 Pt. Skt	M-1214	7/16" 12 Pt. Skt	1116	1/4" & 1/2" Wr
M-605	3/32" 6 Pt. Skt	M-1216	1/2" 12 Pt. Skt	1118	3/32" & 3/16" Wr
M-606	3/16" 6 Pt. Skt	M-1218	9/16" 12 Pt. Skt	1120	5/16" & 3/8" Wr
M-607	7/32" 6 Pt. Skt	M-20A	Sliding Tee	1122	11/32" & 1/2" Wr
M-608	1/4" 6 Pt. Skt	M-106	Spinner Hdle	1124	3/4" & 3/8" Wr
M-609	3/32" 6 Pt. Skt	1112	3/16" & 3/8" Wr	1128	7/16" & 1/2" Wr
M-1210	5/16" 12 Pt. Skt	1113	13/64" & 1/4" Wr	1132	1/2" & 5/16" Wr
M-1211	11/32" 12 Pt. Skt	1114	3/32" & 3/16" Wr	1136	9/16" & 5/8" Wr
M-1212	3/8" 12 Pt. Skt	1115	15/64" & 1/2" Wr	1140	5/8" & 3/4" Wr

SET No. WSM-8C

56 Tools in TB-4A Metal Tool Box, 19-1/2" x 5-7/8" x 1-3/8"

SET No. WSM-8CH

Same as above but with hex in place of 12 point sockets
Total Weight, 6.8 lbs.

Here is a master 1/4" drive set with plenty of drivers and wrenches.

One Ea.	Description	One Ea.	Description	One Ea.	Description
M-406	3/16" 4 Pt. Skt	MD-606	3/16" 6 Pt. Dp	MP-2	Phillips No. 2
M-407	3/32" 4 Pt. Skt	MD-608	1/4" 6 Pt. Dp	PL-1519	Pliers
M-408	1/4" 4 Pt. Skt	MD-609	9/32" 6 Pt. Dp		
M-604	1/8" 6 Pt. Skt	MD-1210	5/16" 12 Pt. Dp	1112	3/16" & 3/8" Wr
M-605	3/32" 6 Pt. Skt	MD-1211	11/32" 12 Pt. Dp	1113	13/64" & 1/4" Wr
M-606	3/16" 6 Pt. Skt	MD-1212	3/8" 12 Pt. Dp	1114	3/32" & 3/16" Wr
M-607	7/32" 6 Pt. Skt	MD-1214	7/16" 12 Pt. Dp	1115	15/64" & 1/2" Wr
M-608	1/4" 6 Pt. Skt	MD-1216	1/2" 12 Pt. Dp	1116	1/4" & 1/2" Wr
M-609	3/32" 6 Pt. Skt	MD-1218	9/16" 12 Pt. Dp	1118	3/32" & 3/16" Wr
M-810	8 Pt. Skt	M-15	Speeder	1120	5/16" & 3/8" Wr
M-812	3/8" 8 Pt. Skt	M-20A	Sliding Tee	1122	11/32" & 1/2" Wr
M-1210	5/16" 12 Pt. Skt	M-42A	Flex Handle	1124	3/4" & 3/8" Wr
M-1211	11/32" 12 Pt. Skt	M-51	Ratchet	1128	7/16" & 1/2" Wr
M-1212	3/8" 12 Pt. Skt	M-106	Spinner Hdle	1132	1/2" & 5/16" Wr
M-1214	7/16" 12 Pt. Skt	M-126	Screw Driver	1136	9/16" & 5/8" Wr
M-1216	1/2" 12 Pt. Skt	M-140A	Universal Jt	1140	5/8" & 3/4" Wr
M-1218	9/16" 12 Pt. Skt	MFE-6	Flex Extension	1150	13/64" & 1/4" Bx Wr
MD-604	1/8" 6 Pt. Dp	MP-1	Phillips No. 1	1151	15/64" & 3/16" Bx Wr
MD-605	3/32" 6 Pt. Dp			1152	9/32" & 1/2" Bx Wr
				1153	11/32" & 5/16" Bx Wr

3/8"

3/8 Inch SQUARE DRIVE BANTAM SUPER SOCKET® WRENCHES

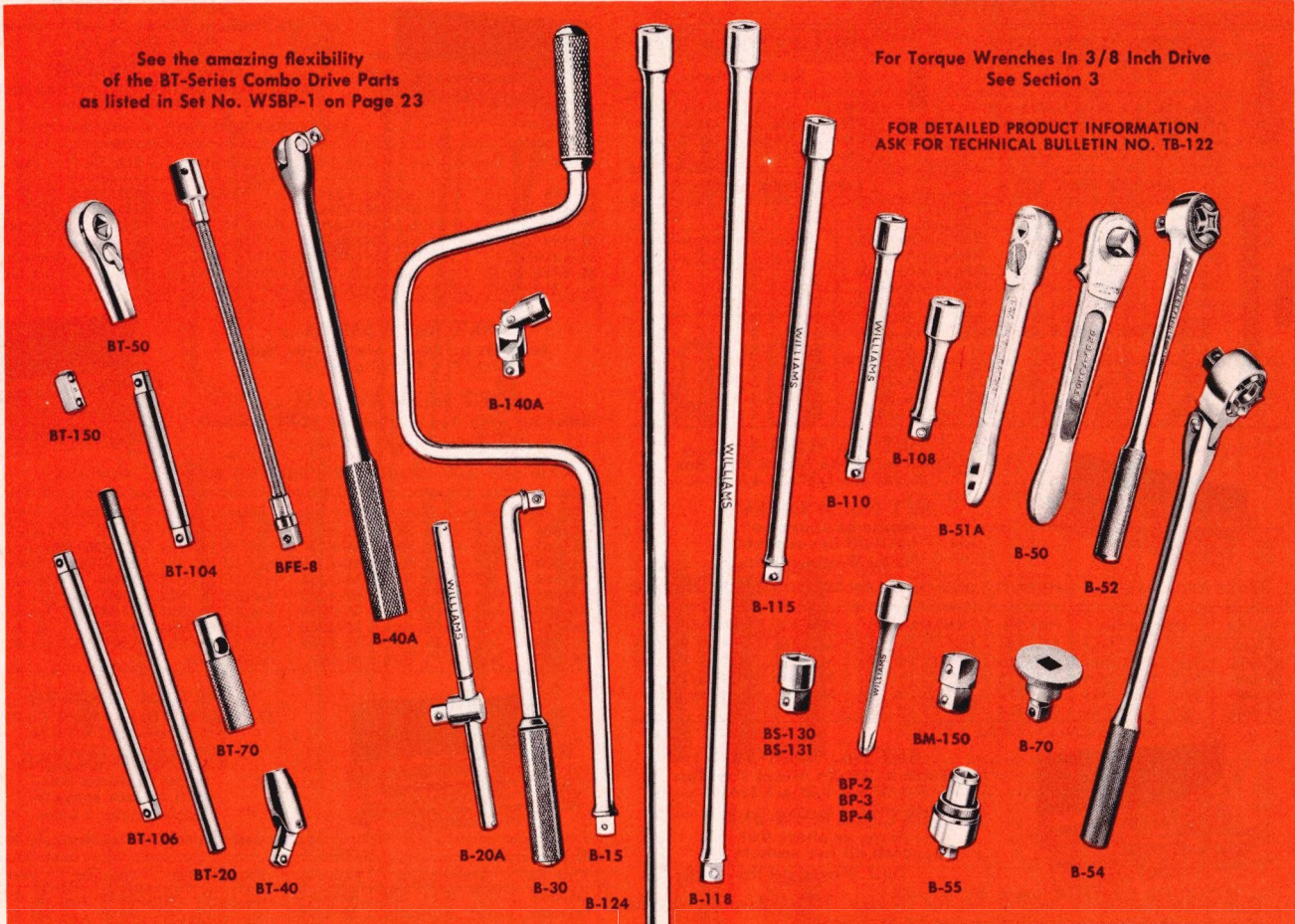
SELECTED ALLOY STEEL

See the amazing flexibility
of the BT-Series Combo Drive Parts
as listed in Set No. WSBP-1 on Page 23

For Torque Wrenches in 3/8 Inch Drive
See Section 3

FOR DETAILED PRODUCT INFORMATION
ASK FOR TECHNICAL BULLETIN NO. TB-122

2 ALLOY SOCKETS AND SETS



MILITARY DESCRIPTION: GGG-W-641D-3

No.	PIECE	Wgt.
B-15	Speeder—16-1/8" long; Knurled revolving grip....	1.1
B-20A	Sliding T Handle—6-1/2" long.....	.26
B-30	Offset Handle—7-3/4" long; Knurled grip.....	.50
B-40A	Flex Handle—9-5/8"; flexible head, knurled grip.....	.57
B-50	Drop-Forged Ratchet—6-1/2" long; complete with No. B-150 Plug-Connector.....	.43
B-51A	Reversible Ratchet for Refrigeration Service—6-1/2" long, 24 teeth in ratchet-gear. Has both 3/8" square male and 1/4" square female ratchet drive. Also has 3/16" and 1/4" square drive holes in handle end.	.44
B-52	Reversible Ratchet—7-5/8" long. Concentric type Mechanism of 82 tooth action permits rotation of nuts in close quarters. Shift lever reverses action	.56
B-54	Flex Head Ratchet Same mechanism as B-52. Handle flexes 90° either way from horizontal. 10-1/2" long.	.81
B-55	Ratchet Adapter—41 teeth. 2-1/8" long; outside diameter 1-3/16". Knurled shifter reverses action	.31
B-70	Ratchet Spinner. Place between ratchet and socket for fast spinning of nuts by hand. 1-5/16" dia....	.16
B-101	Extension Bar—1-1/2" long.....	.10
B-108	Extension Bar—3" long.....	.16
B-110	Extension Bar—5-1/2" long.....	.23

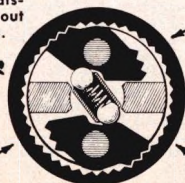
Example of Order Nomenclature: "B-52 RATCHET" etc.

No.	PIECE	Wgt.
B-115	Extension Bar—10-3/8" long.....	.44
B-118	Extension Bar—18" long.....	.84
B-124	Extension Bar—24" long.....	1.
B-140A	Universal Joint—Fitted with spring tension to maintain operating angle desired—range approx. 140°..	.13
B-150	Ratchet Plug-Connector for B-50 Ratchet.....	.03
BFE-8	Flexible Extension—8" long. Extremely useful in hard to reach spots. Exceptionally strong flexible 5/16" diam. cable.....	.22
BM-150	Adapter—3/8" square male and 1/4" square male... .	.03
BP-2	Phillips No. 2 Screwdriver, fits Screws Nos. 5 to 9... .	.06
BP-3	Phillips No. 3 Screwdriver, fits Screws Nos. 10 to 16... .	.13
BP-4	Phillips No. 4 Screwdriver, fits Screws No. 18 and larger... .	.13
BS-130	Adapter—3/8" square female and 1/2" square male... .	.13
BS-131	Adapter—3/8" square female and 1/2" square male... .	.15
BT-20	Combo Tee Bar—7-1/2" long, fits BT-70 Handle Grip... .	.23
BT-40	Combo Flex Head—2-1/4" long, 3/8" male x 3/8" female... .	.13
BT-50	Combo Reversible Ratchet Head—2-13/16" long... .	.29
BT-70	Combo Handle Grip—2-5/8" long, 3/8" female with cross hole.....	.11
BT-104	Combo Extension Bar—3-3/4" long, 3/8" male both ends.....	.19
BT-106	Combo Extension Bar—6" long, 3/8" male both ends.....	.30
BT-150	Combo Ratchet Plug Connector—1" long, 3/8" x 3/8" male.....	.03

YOU GET THESE OUTSTANDING FEATURES IN WILLIAMS B-52 and B-54 RATCHETS

Stresses evenly distributed throughout entire mechanism.

41 Teeth give 82 tooth action requiring less than 4 1/2° swing of handle for complete nut rotation.



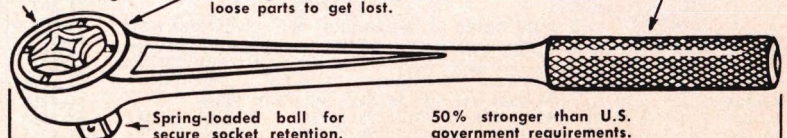
Rugged construction. No one part bears bulk of stresses.

The harder the pull on the handle, the more teeth that come in contact because of the six tooth, two pawl design.

Four winged shifter for instantaneous on-off ratcheting.

Single unit construction. Entire mechanism easily removed for cleaning and servicing. No loose parts to get lost.

Knurled handle provides safe, non-irritating grip.



Spring-loaded ball for secure socket retention.

50% stronger than U.S. government requirements.

Length directly proportioned to weight distribution for ideal balance, comfort and leverage.

FOR INDUSTRIAL BLACK FINISH RATCHETS AND DRIVERS SEE PAGE 74.



3/8 Inch SQUARE DRIVE BANTAM SUPER SOCKET® WRENCHES

SELECTED ALLOY STEEL

3/8"

Extruded from Selected Alloy Steel, heat-treated and chrome-plated. Universal Sockets fitted with spring tension to maintain operating angle. Range approx. 130°. For detailed product information ask for Technical Bulletin No. TB-122.

Example of Order Nomenclature: "BD-628 SOCKET"

REGULAR 6-POINT SOCKETS



B-608 to B-614

B-616 to B-628

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
1/4	B-608	3/8	7/32	1- 1/8	.06	
5/16	B-610	7/16	1/4	1- 1/8	.05	
11/32	B-611	1/2	9/32	1- 1/8	.05	
3/8	B-612	17/32	9/32	1- 1/8	.05	
7/16	B-614	5/8	5/16	1- 1/8	.06	
1/2	B-616	11/16	11/32	1- 3/16	.07	
9/16	B-618	49/64	3/8	1- 3/16	.09	
5/8	B-620	27/32	13/32	1- 3/16	.09	
11/16	B-622	59/64	7/16	1- 3/16	.11	
3/4	B-624	1	1/2	1- 3/16	.15	
13/16	B-626	1- 1/16	1/2	1- 1/4	.17	
7/8	B-628	1- 9/64	17/32	1- 1/4	.18	

REGULAR 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE A



B-1208 to B-1214

B-1216 to B-1232

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
1/4	B-1208	3/8	7/32	1- 1/8	.06	
5/16	B-1210	7/16	1/4	1- 1/8	.05	
11/32	B-1211	1/2	9/32	1- 1/8	.05	
3/8	B-1212	17/32	9/32	1- 1/8	.05	
7/16	B-1214	5/8	5/16	1- 1/8	.06	
1/2	B-1216	11/16	11/32	1- 3/16	.07	
17/32	B-1217	47/64	23/64	1- 3/16	.08	
9/16	B-1218	49/64	3/8	1- 3/16	.09	
19/32	B-1219	13/16	25/64	1- 3/16	.08	
5/8	B-1220	27/32	13/32	1- 3/16	.09	
11/16	B-1222	59/64	7/16	1- 3/16	.11	
3/4	B-1224	1	15/32	1- 3/16	.15	
13/16	B-1226	1- 1/16	1/2	1- 1/4	.17	
7/8	B-1228	1- 9/64	17/32	1- 1/4	.18	
15/16	B-1230	1- 1/4	19/32	1- 3/8	.20	
1	B-1232	1- 5/16	19/32	1- 3/8	.26	

EXTRA DEEP 6-POINT SOCKETS



BD-612 and BD-614

BD-616 to BD-628

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
3/8	BD-612	9/16	11/32	2	.09	
7/16	BD-614	5/8	3/8	2	.10	
1/2	BD-616	11/16	7/16	2	.10	
9/16	BD-618	25/32	1/2	2	.13	
5/8	BD-620	27/32	17/32	2- 1/4	.16	
11/16	BD-622	15/16	9/16	2- 3/8	.22	
3/4	BD-624	1	19/32	2- 1/2	.22	
13/16	BD-626	1- 1/16	11/16	2- 5/8	.24	
7/8	BD-628	1- 9/64	3/4	2-13/16	.35	

EXTRA DEEP 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE B



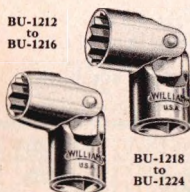
BD-1212 and BD-1214

BD-1216 to BD-1228

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
3/8	BD-1212	9/16	11/32	2	.09	
7/16	BD-1214	5/8	3/8	2	.10	
1/2	BD-1216	11/16	7/16	2	.10	
9/16	BD-1218	25/32	1/2	2	.13	
5/8	BD-1220	27/32	17/32	2- 1/4	.16	
11/16	BD-1222	15/16	9/16	2- 3/8	.22	
3/4	BD-1224	1	19/32	2- 1/2	.22	
13/16	BD-1226	1- 1/16	11/16	2- 5/8	.24	
7/8	BD-1228	1- 9/64	3/4	2-13/16	.35	

UNIVERSAL 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 4



BU-1212 to BU-1216

BU-1218 to BU-1224

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
3/8	BU-1212	17/32	1/4	1-25/32	.11	
7/16	BU-1214	39/64	9/32	1-13/16	.11	
1/2	BU-1216	11/16	5/16	1-27/32	.11	
9/16	BU-1218	49/64	11/32	1-57/64	.12	
5/8	BU-1220	27/32	3/8	1-61/64	.13	
11/16	BU-1222	59/64	13/32	1-63/64	.13	
3/4	BU-1224	63/64	7/16	2- 1/64	.15	



†For use on 1/8" Pipe and Drain Plugs

EXTRA DEEP 8-POINT SOCKETS

Opng.	No.	Nose Dia.	Dpth.	Opng.	Lgth.	Wgt.
9/32	†B-409	1/2	1/4	15/16	.05	
7/16	BD-814	3/4	9/16	1- 1/2	.09	
1/2	BD-816	7/8	9/16	1- 1/2	.13	
9/16	BD-818	31/32	9/16	1- 1/2	.14	
5/8	BD-820	1- 1/16	5/8	1- 1/2	.18	



BD-620R BD-626R

RUBBER INSERT SPARK PLUG SOCKET

Rubber insert is designed to hold plug in place when removing or replacing. The 3/4" hex on end of BD-626R socket is useful in reaching tight spots.

Opng.	No.	Nose Dia.	Lgth.	Wgt.
5/8	BD-620R	27/32	2-1/4	.17
13/16	BD-626R	1- 1/16	2-7/16	.28

CROWFOOT ATTACHMENTS



Opng.	No.	Width	Thick.	Wgt.
3/8	BC-1700	29/32	19/64	.08
7/16	BC-1701	29/32	19/64	.08
1/2	BC-1001	1- 1/8	21/64	.11
9/16	BC-1702	1- 1/8	21/64	.11
5/8	BC-1703	1-11/32	25/64	.18
11/16	BC-1003	1-11/32	25/64	.18

HOLLOW SCREW SOCKET BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A



Bit No.	Hex Plug Size	For Hollow Screws		Wgt.
		Set Screw	Cap Screw	
AB-608	1/4	1/2	5/16	.06
AB-610	5/16	5/8	3/8	.06

HEX BIT SOCKETS WITH BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A



Sockets and bits furnished disassembled. Key wrench not included.

Bit Size	WITH SHORT BIT			WITH LONG BIT			Skt. Dia.
	No.	Lgth.	Wgt.	No.	Lgth.	Wt.	
3/32	BA-3	1- 7/8	.07	BA-3L	2-15/16	.08	11/16
1/8	BA-4	1-15/16	.07	BA-4L	3-13/16	.08	11/16
5/32	BA-5	1-15/16	.07	BA-5L	3-13/16	.08	11/16
3/16	BA-6	1-15/16	.08	BA-6L	3-13/16	.10	11/16
7/32	BA-7	1-15/16	.08	BA-7L	3-13/16	.10	11/16
1/4	BA-8	2	.08	BA-8L	4- 3/4	.12	11/16
5/16	BA-10	2	.11	BA-10L	4- 3/4	.17	11/16
3/8	BA-12	2- 1/8	.14	BA-12L	5- 3/4	.25	11/16

HEX BIT SOCKETS WITH SCREWDRIVER BITS

No.	Bit Size	Lgth.	Diam.	Wgt.
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WITH SLOTTED SCREW BITS

No.	Tip Size	Lgth.	Wgt.
BA-10-1S	3/16 x .032	2- 1/4	11/16
BA-10-2S	7/32 x .040	2- 1/4	11/16
BA-10-3S	9/32 x .045	2- 1/4	11/16
BA-10-4S	5/16 x .055	2- 1/4	11/16

WITH PHILLIPS SCREW BITS

No.	Bit Size	Lgth.	Wgt.
BA-10-1P	No. 1	2	11/16
BA-10-2P	No. 2	2	11/16
BA-10-3P	No. 3	2	11/16
BA-10-4P	No. 4	2	11/16

SLOTTED SCREW BITS

PHILLIPS SCREW BITS

No.	Tip Size	Lgth.	Wgt.	No.	Bit Size	Lgth.	Wgt.
ASB-1	3/16 x .032	1-1/2	.03	APB-1	No. 1	1-1/4	.03
ASB-2	7/32 x .040	1-1/2	.03	APB-2	No. 2	1-1/4	.03
ASB-3	9/32 x .045	1-1/2	.03	APB-3	No. 3	1-1/4	.03
ASB-4	5/16 x .055	1-1/2	.03	APB-4	No. 4	1-1/4	.03



5/16" Hex

SHORT HEX BITS

LONG HEX BITS

No.	Hex	Lgth.	Wgt.	No.	Hex	Lgth.	Wgt.
A-3	3/32	1-1/16	.003	A-3L	3/32	2-1/8	.006
A-4	1/8	1-1/8	.006	A-4L	1/8	3	.01
A-5	5/32	1-1/8	.01	A-5L	5/32	3	.02
A-6	3/16	1-1/8	.01	A-6L	3/16	3	.03
A-7	7/32	1-1/8	.01	A-7L	7/32	3	.04
A-8	1/4	1-1/4	.02	A-8L	1/4	4	.06
A-10	5/16	1-1/4	.03	A-10L	5/16	4	.10
A-12	3/8	1-3/8	.05	A-12L	3/8	5	.18

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



3/8"

3/8 Inch SQUARE DRIVE BANTAM SUPER SOCKET® SETS

SELECTED ALLOY STEEL



No. BPA-52
Ratchet Repair Kit
For B-52 and B-54 Ratchets
Total Weight, .08 lbs.

Kit contains all necessary parts for the repair of five ratchets. Complete assembly instructions are included.

Replacement parts listed below also sold individually.

Qty.	No.	Description	Wgt. Ea., Lbs.
5	B-52RK	B-52RU Ratchet Unit and B-52G Gland	.13
1	B-52W	Spanner Wrench for use on Gland	.13

FLEX HANDLE REPLACEMENT PARTS

Qty.	No.	Description
B-40RK FLEX HANDLE REPAIR KIT Total Weight, .06 lbs.		
For fast, efficient repair of new design B-40A Flex Handle. Complete instructions included with kit.		
1	B-40-1	Drive Tang
1	B-40-2	Spring
1	B-40-3	Hinge Pin

B-54RK HANDLE REPAIR KIT FOR B-54 FLEX HEAD RATCHET Total Weight, .01 lbs.		
1	B-54-2	Spring
1	B-54-3	Hinge Pin

SET No. WSB-8
10 Hex Sockets
in TBT-3 Tray
Total Weight, 1 lb.

This is an unusually handy way to store sockets. Full length clip on back of tray allows user to hang this set on edge of cabinet or other surface near work.

One	Size	One	Size	One	Size
B-608	1/4" Hex Skt	B-614	7/16" Hex Skt	B-620	5/8" Hex Skt
B-610	9/16" Hex Skt	B-616	1/2" Hex Skt	B-622	11/16" Hex Skt
B-611	11/32" Hex Skt	B-618	9/16" Hex Skt	B-624	3/4" Hex Skt
B-612	5/8" Hex Skt	.....	.....	.....	.....

SET No. WSB-9
10 12-Point Sockets
in TBT-3 Tray
Total Weight, .94 lb.

Functional tray has full length clip on back for hanging on cabinet, roller cab, etc., near work.

One	Size	One	Size	One	Size
B-1208	1/4" 12 Pt. Skt	B-1214	7/16" 12 Pt. Skt	B-1220	5/8" 12 Pt. Skt
B-1210	9/16" 12 Pt. Skt	B-1216	1/2" 12 Pt. Skt	B-1222	11/16" 12 Pt. Skt
B-1211	11/32" 12 Pt. Skt	B-1218	9/16" 12 Pt. Skt	B-1224	3/4" 12 Pt. Skt
B-1212	5/8" 12 Pt. Skt	.....	.....	.....	.....

SET No. WSB-11
9 Hex Deep Sockets
in TBT-4 Tray
Total Weight, 2.2 lbs.

An excellent way to add hex deep sockets to your set. Handy tray has full length hanger clip on back.

One	Size	One	Size	One	Size
BD-612	3/8" Hex Skt	BD-618	9/16" Hex Skt	BD-624	3/4" Hex Skt
BD-614	7/16" Hex Skt	BD-620	5/8" Hex Skt	BD-626	11/16" Hex Skt
BD-616	1/2" Hex Skt	BD-622	11/16" Hex Skt	BD-628	7/8" Hex Skt

SET No. WSB-12
9 12-Point Deep Sockets
in TBT-4 Tray
Total Weight, 2 lbs.

This is the way to store deep sockets so they can be easily found and hung near the operator's work.

One	Size	One	Size	One	Size
BD-1212	3/8" 12 Pt. Skt	BD-1218	9/16" 12 Pt. Skt	BD-1224	3/4" 12 Pt. Skt
BD-1214	7/16" 12 Pt. Skt	BD-1220	5/8" 12 Pt. Skt	BD-1226	11/16" 12 Pt. Skt
BD-1216	1/2" 12 Pt. Skt	BD-1222	11/16" 12 Pt. Skt	BD-1228	7/8" 12 Pt. Skt

SET No. WSB-1
11 Tools in TB-2A Metal Tool Box
10" x 2-13/16" x 1-3/8"

SET No. WSB-1H
Same as above but with all hex sockets
Total Weight, 2.4 lbs.

An excellent starter set for the 3/8" drive series with openings from 1/4" to 3/4". The B-52 Ratchet has a 41 tooth mechanism offering fine, 82 tooth action which will rotate nuts in only 4 1/2° swing of the handle.

One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1208	1/4" 12 Pt Skt	B-1214	7/16" 12 Pt Skt	B-1222	11/16" 12 Pt Skt
B-1210	9/16" 12 Pt Skt	B-1216	1/2" 12 Pt Skt	B-1224	3/4" 12 Pt Skt
B-1211	11/32" 12 Pt Skt	B-1218	9/16" 12 Pt Skt	B-52	Ratchet
B-1212	5/8" 12 Pt Skt	B-1220	5/8" 12 Pt Skt	.....	.....



SET No. WSB-3
6 Tools in Cardboard Box
Total Weight, .50 lb.

Full range of sizes for turning nuts in unusual spots.

One Ea.	Description
BC-1700	3/8" Crowfoot Attach
BC-1701	7/16" Crowfoot Attach
BC-1001	1/2" Crowfoot Attach
BC-1702	9/16" Crowfoot Attach
BC-1703	5/8" Crowfoot Attach
BC-1003	11/16" Crowfoot Attach



SET No. WSB-2
7 Tools in Cardboard Box
Total Weight, .75 lb.

This full range set is a welcome addition to any set.

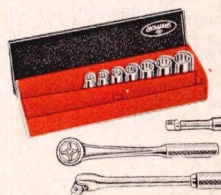
One Ea.	Description
BU-1212	3/8" 12 Pt Univ Skt
BU-1214	7/16" 12 Pt Univ Skt
BU-1216	1/2" 12 Pt Univ Skt
BU-1218	9/16" 12 Pt Univ Skt
BU-1220	5/8" 12 Pt Univ Skt
BU-1222	11/16" 12 Pt Univ Skt
BU-1224	3/4" 12 Pt Univ Skt

SET No. WSB-14
12 Tools in TB-2A Metal Tool Box
10" x 2-13/16" x 1-3/8"

SET No. WSB-14H
Same as above but with all hex sockets
Total Weight, 2.9 lbs.

An excellent range of sockets with sturdy flex handle makes this an excellent basic 3/8" drive set.

One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1208	1/4" 12 Pt. Skt	B-1216	1/2" 12 Pt. Skt	B-1224	3/4" 12 Pt. Skt
B-1210	9/16" 12 Pt. Skt	B-1218	9/16" 12 Pt. Skt	B-1226	11/16" 12 Pt. Skt
B-1212	5/8" 12 Pt. Skt	B-1220	5/8" 12 Pt. Skt	B-1228	7/8" 12 Pt. Skt
B-1214	7/16" 12 Pt. Skt	B-1222	11/16" 12 Pt. Skt	B-40A	Flex Handle



SET No. WSB-16
10 Tools in TB-2A Metal Tool Box
10" x 2-13/16" x 1-3/8"

SET No. WSB-16H
Same as above but with all hex sockets
Total Weight, 3.2 lbs.

Here is the most popular range of socket sizes combined with the basic drive units for a very versatile set.

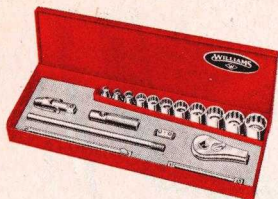
One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1212	3/8" 12 Pt. Skt	B-1220	5/8" 12 Pt. Skt	B-40A	Flex Handle
B-1214	7/16" 12 Pt. Skt	B-1222	11/16" 12 Pt. Skt	B-52	Ratchet
B-1216	1/2" 12 Pt. Skt	B-1224	3/4" 12 Pt. Skt	B-108	3" Extension
B-1218	9/16" 12 Pt. Skt	.....	.....	.....	.....



3/8 Inch SQUARE DRIVE BANTAM SUPER SOCKET® SETS

SELECTED ALLOY STEEL

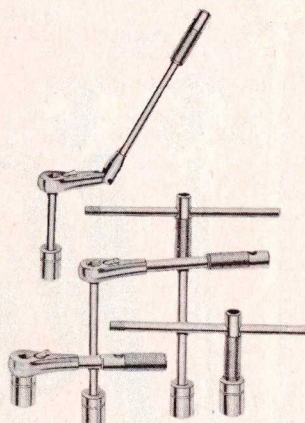
3/8"



COMBO SET No. WSBP-1
18 Tools in TB-14 Metal Tool Box
12-3/4" x 4-1/4" x 1-3/8"

COMBO SET No. WSBP-1H
Same as above but with all hex sockets
Total Weight, 4.2 lbs.

With only seven basic driver parts you can make hundreds of different drive combinations from a flex head ratchet to sliding tee or flex handle. Does the job of sets twice its size.



One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1208	1/4" 12 Pt Skt	B-1220	5/8" 12 Pt Skt	BT-40	Flex Head
B-1210	3/16" 12 Pt Skt	B-1222	1 1/16" 12 Pt Skt	BT-50	Ratchet Head
B-1212	3/8" 12 Pt Skt	B-1224	3/4" 12 Pt Skt	BT-70	Grip
B-1214	7/16" 12 Pt Skt	B-1226	1 1/8" 12 Pt Skt	BT-104	3 3/4" Ext'n
B-1216	1/2" 12 Pt Skt	B-1228	7/8" 12 Pt Skt	BT-106	6" Ext'n
B-1218	5/8" 12 Pt Skt	BT-20	Tee Bar	BT-150	Plug Conn

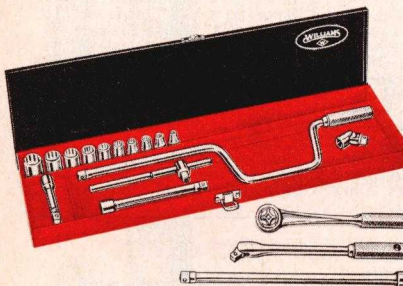


SET No. WSB-4A
13 Tools in TB-4A Metal Tool Box
19-1/2" x 5-7/8" x 1-3/8"

SET No. WSB-4AH
Same as above but with all hex sockets
Total Weight, 6.3 lbs.

A good basic set for the mechanic who wants a reasonable variety of drivers and sockets. Metal case has space for additional tools.

One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1212	3/8" 12 Pt Skt	B-1222	1 1/16" 12 Pt Skt	B-108	3" Ext'n
B-1214	7/16" 12 Pt Skt	B-1224	3/4" 12 Pt Skt	B-115	10 1/2" Ext'n
B-1216	1/2" 12 Pt Skt	B-15	Speeder	B-140A	Universal Jt
B-1218	5/8" 12 Pt Skt	B-40A	Flex Handle	.....	.....
B-1220	3/4" 12 Pt Skt	B-52	Ratchet	.....	.....

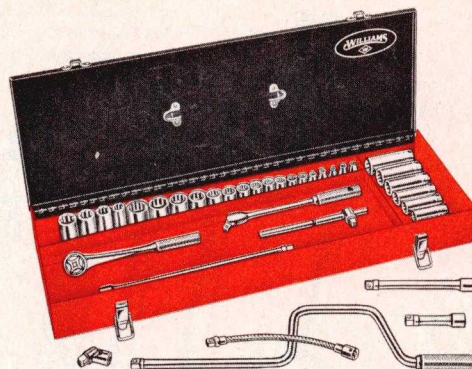


SET No. WSB-4
18 Tools in TB-4A Metal Tool Box
19-1/2" x 5-7/8" x 1-3/8"

SET No. WSB-4H
Same as above but with all hex sockets
Total Weight, 7 lbs.

Additional sockets and drivers extend the flexibility of this set beyond that of the WSB-4A set. Socket range from 1/4" to 3/4".

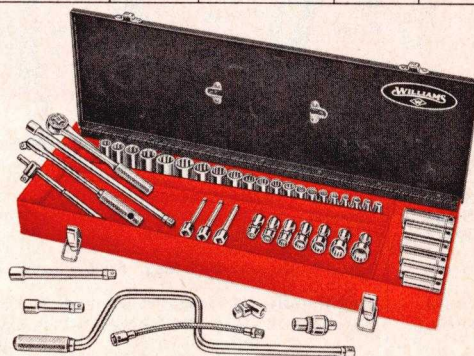
One Ea.	Description	One Ea.	Description	One Ea.	Description
B-1208	1/4" 12 Pt Skt	B-1218	5/8" 12 Pt Skt	B-40A	Flex Handle
B-1210	3/16" 12 Pt Skt	B-1220	3/4" 12 Pt Skt	B-52	Ratchet
B-1212	3/8" 12 Pt Skt	B-1222	1 1/16" 12 Pt Skt	B-108	3" Ext'n
B-1214	7/16" 12 Pt Skt	B-1224	3/4" 12 Pt Skt	B-110	5 1/2" Ext'n
B-1216	1/2" 12 Pt Skt	B-15	Speeder	B-115	10 1/2" Ext'n
B-1218	5/8" 12 Pt Skt	B-20A	Sliding Tee	B-140A	Universal Jt



SET No. WSB-5D
38 Tools in TB-7 Metal Tool Box
23" x 7-3/4" x 2-1/4"
Total Weight, 14.1 lbs.

An intermediate set with a full range of regular and deep sockets and an ample assortment of drivers. Case has plenty of space for additional items.

One Ea.	Description	One Ea.	Description	One Ea.	Description
B-409	9/32" 4 Pt Skt	B-1226	1 1/8" 12 Pt Skt	BD-1224	3/4" 12 Pt Dp
B-1208	1/4" 12 Pt Skt	B-1228	7/8" 12 Pt Skt	BD-1226	1 1/16" 12 Pt Dp
B-1210	3/16" 12 Pt Skt	B-1230	1 1/16" 12 Pt Skt	BD-1228	7/8" 12 Pt Dp
B-1212	3/8" 12 Pt Skt	B-1232	1" 12 Pt Skt	B-15	Speeder
B-1214	7/16" 12 Pt Skt	BD-814	3/16" 8 Pt Dp	B-20A	Sliding Tee
B-1216	1/2" 12 Pt Skt	BD-816	1/8" 8 Pt Dp	B-40A	Flex Handle
B-1218	5/8" 12 Pt Skt	BD-818	3/8" 8 Pt Dp	B-52	Ratchet
B-1220	3/4" 12 Pt Skt	BD-820	1/2" 8 Pt Dp	B-108	3" Ext'n
B-1222	1 1/16" 12 Pt Skt	BD-1214	3/16" 12 Pt Dp	B-110	5 1/2" Ext'n
B-1224	3/4" 12 Pt Skt	BD-1216	1/8" 12 Pt Dp	B-115	10 1/2" Ext'n
		BD-1218	3/8" 12 Pt Dp	B-140A	Universal Jt
		BD-1220	1/2" 12 Pt Dp	BFE-8	Flexible Ext'n.
		BD-1222	5/8" 12 Pt Dp	.....	.....



SET No. WSB-6D
49 Tools in TB-7 Metal Tool Box
23" x 7-3/4" x 2-1/4"
Total Weight, 15.8 lbs.

This master 3/8" drive set offers the full range of regular, deep and universal sockets, drivers and Phillips bits. You can be confident that the right tool at the right time can be assembled in seconds.

One Ea.	Description	One Ea.	Description	One Ea.	Description
B-409	9/32" 4 Pt Skt	BD-814	3/16" 8 Pt Dp	BU-1222	1 1/16" 12 Pt Univ
B-1208	1/4" 12 Pt Skt	BD-816	1/8" 8 Pt Dp	BU-1224	3/4" 12 Pt Univ
B-1210	3/16" 12 Pt Skt	BD-818	3/8" 8 Pt Dp	B-15	Speeder
B-1212	3/8" 12 Pt Skt	BD-820	1/2" 8 Pt Dp	B-20A	Sliding Tee
B-1214	7/16" 12 Pt Skt	BD-1214	3/16" 12 Pt Dp	B-40A	Flex Handle
B-1216	1/2" 12 Pt Skt	BD-1216	1/8" 12 Pt Dp	B-52	Ratchet
B-1218	5/8" 12 Pt Skt	BD-1218	3/8" 12 Pt Dp	B-55	Ratchet Adapter
B-1220	3/4" 12 Pt Skt	BD-1220	1/2" 12 Pt Dp	B-108	3" Ext'n
B-1222	1 1/16" 12 Pt Skt	BD-1222	5/8" 12 Pt Dp	B-110	5 1/2" Ext'n
B-1224	3/4" 12 Pt Skt	BD-1224	3/4" 12 Pt Dp	B-115	10 1/2" Ext'n
B-1226	1 1/8" 12 Pt Skt	BD-1226	1 1/16" 12 Pt Dp	B-140A	Universal Jt
B-1228	7/8" 12 Pt Skt	BD-1228	7/8" 12 Pt Dp	BFE-8	Flexible Ext'n.
B-1230	1 1/16" 12 Pt Skt	BU-1212	3/8" 12 Pt Univ	BP-2	Phillips No. 2
B-1232	1" 12 Pt Skt	BU-1214	7/16" 12 Pt Univ	BP-3	Phillips No. 3
		BU-1216	1/2" 12 Pt Univ	BP-4	Phillips No. 4
		BU-1218	3/8" 12 Pt Univ	.....	.....
		BU-1220	1/2" 12 Pt Univ	.....	.....

2 ALLOY SOCKETS AND SETS

1/2"

1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® WRENCHES

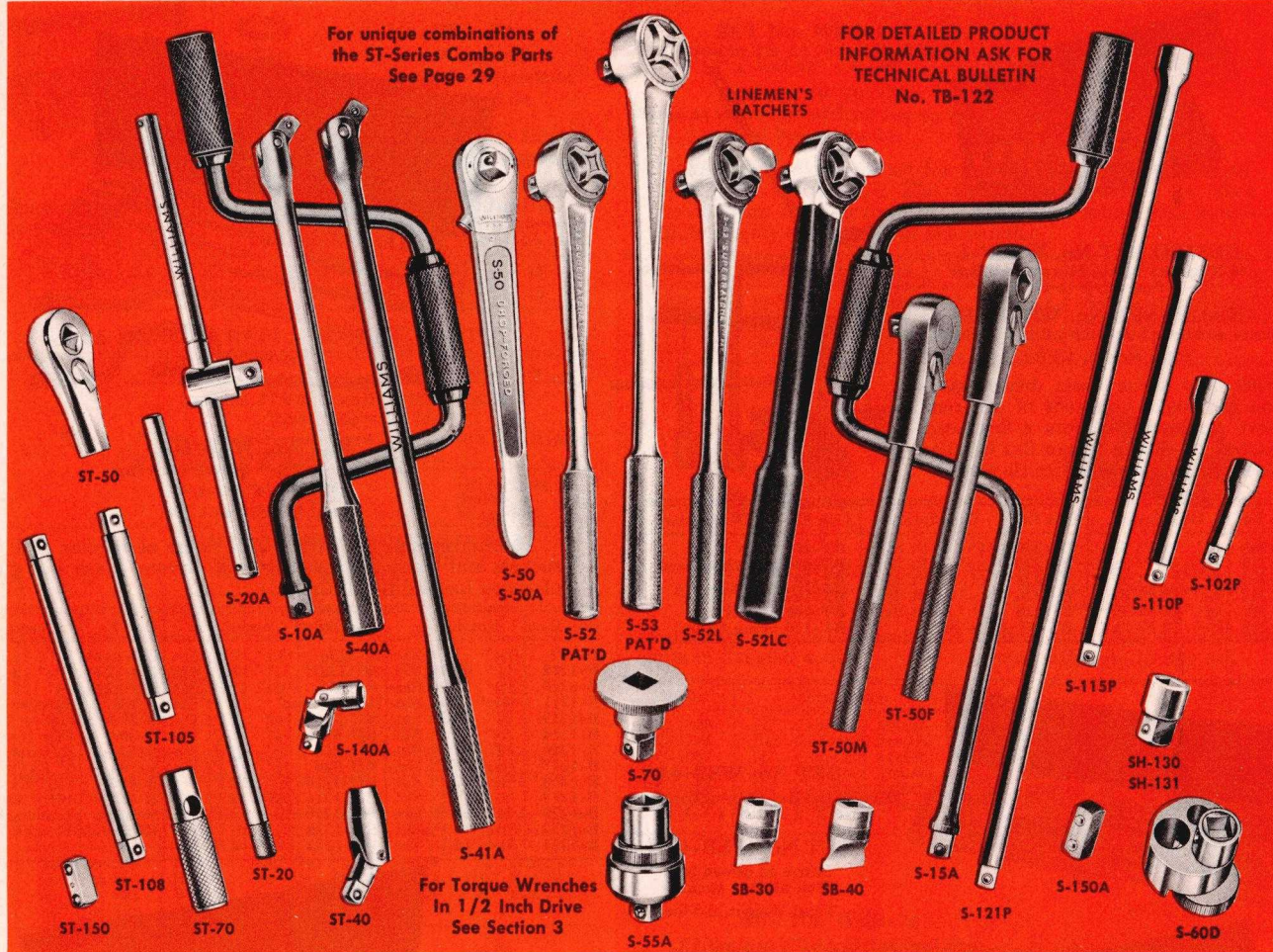
SELECTED ALLOY STEEL

**For unique combinations of
the ST-Series Combo Parts
See Page 29**

**FOR DETAILED PRODUCT
INFORMATION ASK FOR
TECHNICAL BULLETIN
No. TB-122**

LINEMEN'S

2 ALLOY SOCKETS AND SETS



MILITARY DESCRIPTION: GGG-W-641D-3

No.	Description	Wgt.
S-10A	Speeder —13-7/16" long, with knurled revolving grips	1.8
S-15A	Speeder —18-7/8" long, with knurled revolving grips	2.
S-20A	Sliding T Handle —11" long.	.96
S-40A	Flex Handle —12-1/8" long; flexible head, knurled grip.	1.4
S-41A	Flex Handle —17" long; flexible head, knurled grip.	1.8
S-50	Ratchet —10" long, with Locked-in Plug Connector	1.3
S-50A	Ratchet —10" long, without Plug Connector.	1.3
S-52	Reversible Ratchet —11-1/4" long, 82 tooth action. Shifter reverses action instantly.	1.2
S-52L	Linemen's Reversible Ratchet —11-1/4" long, 82 tooth action. Special shifter for operators using gloves.	1.3
S-52LC	Linemen's Reversible Ratchet —11-1/2" long. Same as S-52L with Cementex insulated handle up to head.	1.5
S-53	Reversible Ratchet —15" long. Has same fine mechanism as S-52 Ratchet.	1.6
S-55A	Ratchet Adapter —41 teeth, 2-5/8" long; outside diameter 1-5/8". Knurled shifter reverses action instantly.	.66
S-60D	Stud Remover . Stud capacity 1/4" to 3/4".	.52

Example of Order Nomenclature: "S-121P EXTENSION" etc.

No.	Description	Wgt.
S-70	Ratchet Spinner —1-3/4" diameter. Use between ratchet and socket to spin nuts fast by hand. ....	.3
S-102P	Extension Bar —2-1/2" long. ....	.27
S-110P	Extension Bar —5-1/2" long. ....	.53
S-115P	Extension Bar —10-1/2" long.	1.
S-121P	Extension Bar —20" long.	2.1
S-140A	Universal Joint —Spring tension maintains angle. ....	.34
S-150A	Ratchet Plug- Connector for S-50 Ratchet. ....	.08
SB-30	Screwdriver "drag link" Socket—7/64 x 1 5/16" blade. ....	.14
SB-40	Screwdriver "drag link" Socket—3/32 x 1-1/4" blade. ....	.16
SH-130	Adapter —1/2" square female and 3/4" square male ....	.31
SH-131	Adapter —1/2" square male and 3/4" square female ....	.44
ST-20	Combo Tee Bar —10-1/4" long, fits ST-70 Handle Grip ....	.58
ST-40	Combo Flex Head —3-1/16" long, 1/2" M x 1/2" F ....	.33
ST-50	Combo Reversible Ratchet Head —3-3/4" long. ....	.70
ST-50F	Reversible Ratchet —10-1/2" long, 1/2" F in head.	1.6
ST-50M	Reversible Ratchet —10-1/2" long, 1/2" M in head.	1.7
ST-70	Combo Handle Grip —3-1/2", 1/2" F with cross hole ....	.28
ST-105	Combo Extension Bar —5" long, 1/2" male both ends ....	.41
ST-108	Combo Extension Bar —8" long, 1/2" male both ends ....	.66
ST-150	Combo Ratchet Plug Connector —1-1/4" long, 1/2" x 1/2" male. ....	.08

YOU GET THESE OUTSTANDING FEATURES IN WILLIAMS S-52, S-52L, S-52LC and S-53 RATCHETS

Stresses evenly distributed throughout entire mechanism.

Rugged construction. No one part bears bulk of stresses.

Four winged shifter for instantaneous on-off ratcheting.

Single unit construction. Entire mechanism easily removed for cleaning and servicing. No loose parts to get lost.

Knurled handle provides safe, non-irritating grip.

41 Teeth give 82 tooth action requiring less than 4 1/2 ° swing of handle for complete nut rotation.

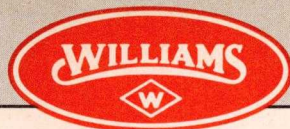
The harder the pull on the handle, the more teeth that come in contact because of the six tooth, two pawl design.

Spring-loaded ball for secure socket retention.

**50% stronger than U.S.
government requirements.**

Length directly proportioned to weight distribution for ideal balance, comfort and leverage.

FOR INDUSTRIAL BLACK FINISH RATCHETS AND DRIVERS SEE PAGE 74.



1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® WRENCHES

SELECTED ALLOY STEEL

1/2"

Extruded from Selected Alloy Steel, heat-treated and chrome-plated. Universal Sockets are fitted with spring tension to

maintain operating angle. Range approx. 130°. For detailed product information ask for Technical Bulletin No. TB-122.

Example of Order Nomenclature: "SD-1230 SOCKET" etc.

REGULAR 6-POINT SOCKETS

*Use with Torque wrench required on Ford models having "Marsden" self-locking nuts on connecting rods.



ST-612 to ST-619



ST-620 to ST-640

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
3/8	ST-612	9/16	21/64	1- 7/16	.10
7/16	ST-614	5/8	25/64	1- 1/2	.11
1/2	ST-616	45/64	25/64	1- 1/2	.11
9/16	ST-618	25/32	17/32	1- 1/2	.13
* 9/16	ST-618	3/4	17/32	1- 1/2	.13
19/32	ST-619	53/64	15/32	1-17/32	.13
5/8	ST-620	7/8	17/32	1-17/32	.14
21/32	ST-621	57/64	17/32	1-17/32	.14
11/16	ST-622	61/64	9/16	1-17/32	.17
3/4	ST-624	1- 1/32	9/16	1- 9/16	.19
25/32	ST-625	1- 3/64	19/32	1- 9/16	.19
13/16	ST-626	1- 3/32	21/32	1-19/32	.23
7/8	ST-628	1-11/64	21/32	1-41/64	.27
15/16	ST-630	1- 9/32	11/16	1-41/64	.29
1	ST-632	1-21/64	23/32	1-11/16	.38
1-1/16	ST-634	1-29/64	13/16	1-27/32	.47
1-1/8	ST-636	1-33/64	27/32	1-27/32	.48
1-1/4	ST-640	1-41/64	29/32	2	.59

REGULAR 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE A



ST-1212 to ST-1219



ST-1220 to ST-1248

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
3/8	ST-1212	9/16	21/64	1- 7/16	.10
7/16	ST-1214	5/8	25/64	1- 1/2	.11
1/2	ST-1216	45/64	25/64	1- 1/2	.11
9/16	ST-1218	25/32	1/2	1- 1/2	.13
19/32	ST-1219	53/64	7/16	1-17/32	.13
5/8	ST-1220	7/8	1/2	1-17/32	.14
21/32	ST-1221	57/64	1/2	1-17/32	.14
11/16	ST-1222	61/64	17/32	1-17/32	.17
3/4	ST-1224	1- 1/32	9/16	1- 9/16	.19
25/32	ST-1225	1- 3/64	19/32	1- 9/16	.19
13/16	ST-1226	1- 3/32	5/8	1-19/32	.23
7/8	ST-1228	1-11/64	5/8	1-41/64	.27
15/16	ST-1230	1- 9/32	21/32	1-41/64	.29
31/32	ST-1231	1- 9/32	21/32	1-21/32	.33
1	ST-1232	1-21/64	11/16	1-11/16	.38
1-1/16	ST-1234	1-29/64	13/16	1-27/32	.47
1-1/8	ST-1236	1-33/64	13/16	1-27/32	.48
1-3/16	ST-1238	1-37/64	27/32	1-29/32	.52
1-1/4	ST-1240	1-41/64	7/8	2	.59
1-5/16	ST-1242	1- 3/4	15/16	2- 1/16	.60
1-3/8	ST-1244	1-13/16	1	2- 1/8	.80
1-7/16	ST-1246	1-15/16	1- 1/16	2- 3/16	.90
1-1/2	ST-1248	2	1- 1/8	2- 1/4	.98

EXTRA DEEP 6-POINT SOCKETS



SD-616 and SD-618



SD-620 to SD-636

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/2	SD-616	47/64	9/16	3- 1/4	.26
9/16	SD-618	13/16	19/32	3- 1/4	.26
5/8	SD-620	7/8	5/8	3- 1/4	.26
11/16	SD-622	15/16	5/8	3- 1/4	.26
3/4	SD-624	1- 1/32	21/32	3- 1/4	.37
*13/16	SD-626	1- 1/16	11/16	3- 1/4	.37
7/8	SD-628	1- 3/16	23/32	3- 1/4	.45
15/16	SD-630	1- 1/4	23/32	3- 1/4	.51
1	SD-632	1- 9/32	3/4	3- 1/4	.52
1-1/16	SD-634	1-29/64	13/16	3- 1/4	.63
1-1/8	SD-636	1-33/64	13/16	3- 1/4	.74

EXTRA DEEP 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 2, STYLE B



SD-1216 and SD-1218



SD-1220 to SD-1236

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/2	SD-1216	47/64	9/16	3-1/4	.26
9/16	SD-1218	51/64	19/32	3-1/4	.26
5/8	SD-1220	7/8	5/8	3-1/4	.26
11/16	SD-1222	15/16	5/8	3-1/4	.26
3/4	SD-1224	1- 1/32	21/32	3-1/4	.37
25/32	SD-1225	1- 1/16	11/16	3-1/4	.37
*13/16	SD-1226	1- 1/16	11/16	3-1/4	.37
7/8	SD-1228	1- 3/16	23/32	3-1/4	.45
15/16	SD-1230	1- 1/4	23/32	3-1/4	.51
1	SD-1232	1- 9/32	3/4	3-1/4	.52
1-1/16	SD-1234	1-29/64	13/16	3-1/4	.63
1-1/8	SD-1236	1-33/64	13/16	3-1/4	.74

†Not Guaranteed because of extra thin walls.

*Services 14 m/m spark plugs.

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

UNIVERSAL 12-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 4



Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
1/2	SU-1216	45/64	5/16	2-23/64	.28
9/16	SU-1218	25/32	3/8	2- 7/16	.29
5/8	SU-1220	7/8	3/8	2-15/32	.30
11/16	SU-1222	61/64	15/32	2- 9/16	.31
3/4	SU-1224	1- 1/64	17/32	2- 5/8	.32

REGULAR 8-POINT SOCKETS

GGG-W-641D-3, TYPE II, CLASS 3



ST-810 to ST-814



ST-816 to ST-832

Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
5/16	ST-810	5/8	13/32	1- 1/2	.14
3/8	ST-812	47/64	15/32	1- 1/2	.14
7/16	ST-814	27/32	7/16	1-17/32	.14
1/2	ST-816	15/16	9/16	1-17/32	.17
9/16	ST-818	1- 3/64	19/32	1- 9/16	.23
5/8	ST-820	1- 1/8	5/8	1-41/64	.30
11/16	ST-822	1- 7/32	5/8	1-41/64	.32
3/4	ST-824	1- 5/16	5/8	1-11/16	.38
13/16	ST-826	1- 7/16	21/32	1-11/16	.45
7/8	ST-828	1- 1/2	23/32	1-27/32	.53
1	ST-832	1-41/64	3/4	2	.65

HOLLOW SCREW SOCKET BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A



Bit No.	Hex Plug Size	For Hollow Screws	Wgt.
		Set Screw	Cap Screw
AS-612	3/8	3/4	7/16 x 1/2
AS-616	1/2	7/8	5/8
AS-618	9/16	1 & 1-1/8	.....
AS-620	5/8	1-1/4 & 1-3/8	3/4

HEX BIT SOCKETS WITH BITS

GGG-W-641D-3, TYPE IV, CLASS 3, STYLE A



Sockets and bits furnished disassembled. Key wrench not included.

Bit Size	WITH SHORT BIT	WITH LONG BIT	Skt. Dia.
	No. Lgth. Wgt.	No. Lgth. Wgt.	
1/4	SA-8 2-1/4 .23	SA-8L 5 .28	1
5/16	SA-10 2-1/4 .23	SA-10L 5 .29	1
3/8	SA-12 2-3/8 .26	SA-12L 6 .39	1
1/2	SA-16 2-3/8 .30	SA-16L 6 .50	1
9/16	SA-18 2-1/2 .41	SA-18L 7 .75	1-1/16
5/8	SA-20 2-1/2 .43	SA-20L 7 .83	1-1/16

HEX BIT SOCKETS WITH SCREWDRIVER BITS

No.	Bit Size	Lgth.	Diam.	Wgt.
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WITH SLOTTED SCREW BITS

No.	Tip Size	Lgth.	Wgt.
SA-10-1S	3/16 x .032	2-1/2	1-3/16
SA-10-2S	7/32 x .040	2-1/2	1-3/16
SA-10-3S	9/32 x .045	2-1/2	1-3/16
SA-10-4S	5/16 x .055	2-1/2	1-3/16

WITH PHILLIPS SCREW BITS

No.	Tip Size	Lgth.	Wgt.
SA-10-1P	No. 1	2-1/4	1-3/16
SA-10-2P	No. 2	2-1/4	1-3/16
SA-10-3P	No. 3	2-1/4	1-3/16
SA-10-4P	No. 4	2-1/4	1-3/16

SLOTTED SCREW BITS

No.	Tip Size	Lgth.	Wgt.
ASB-1	3/16 x .032	1-1/2	.03
ASB-2	7/32 x .040	1-1/2	.03
ASB-3	9/32 x .045	1-1/2	.03
ASB-4	5/16 x .055	1-1/2	.03

PHILLIPS SCREW BITS

No.	Bit Size	Lgth.	Wgt.
APB-1	No. 1	1-1/4	.03
APB-2	No. 2	1-1/4	.03
APB-3	No. 3	1-1/4	.03
APB-4	No. 4	1-1/4	.03

SHORT HEX BITS

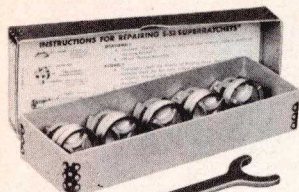
No.	Hex	Lgth.	Wgt.
A-8	1/4	1-1/4	.02
A-10	5/16	1-1/4	.03
A-12	3/8	1-3/8	.05
A-16	1/2	1-3/8	.09
A-18	9/16	1-1/2	.12
A-20	5/8	1-1/2	.14

LONG HEX BITS

No.	Hex	Lgth.	Wgt.
A-8L	1/4	4	.06
A-10L	5/16	4	.10
A-12L	3/8	5	.18
A-16L	1/2	5	.31
A-18L	9/16	6	.46
A-20L	5/8	6	.58

1/2"**1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® SETS**

SELECTED ALLOY STEEL

**No. SPA-52
RATCHET REPAIR KIT**For S-52 and S-53
RATCHETS

Total Weight, 1.5 lbs.

Parts for repairing five S-52 or S-53
Ratchets. Complete instructions included.

Replacement parts, listed below, also sold individually.

No.	Qty.	Description	Wgt. Ea., Lbs.
S-52RK	5	S-52RU Ratchet Unit and S-52G Gland	.27
S-52W	1	Spanner Wrench for use on Gland	.17

S-52 LRK RATCHET REPAIR KIT

Total Weight, .30 lbs.

1 each: S-52 LRU Ratchet unit and S-52 Gland,
for repair of S-52 L and S-52 LC ratchets.**S-40RK FLEX HANDLE REPAIR KIT**

Total Weight, .15 lbs.

For fast, efficient repair of new design S-40A Flex Handle.
Complete instructions included with kit.

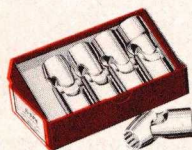
Qty.	No.	Description
1	S-40-1	Drive Tang
1	S-40-2	Spring
1	S-40-3	Hinge Pin

S-41RK FLEX HANDLE REPAIR KIT

Total Weight, .15 lbs.

For fast, efficient repair of new design S-41A Flex Handle.
Complete instructions included with kit.

Qty.	No.	Description
1	S-41-1	Drive Tang
1	S-41-2	Spring
1	S-41-3	Hinge Pin

**SET No. WSS-11
5 Universal Sockets in Cardboard Box**

Total Weight, 1.3 lbs.

These Universal Sockets have an
operating range of approximately
130° and are fitted with tension spring to maintain operating
angle desired. A handy set to add to any 1/2" drive tool chest.

One Ea.	Description	One Ea.	Description	One Ea.	Description
SU-1216	1/2" 12 Pt Univ	SU-1220	5/8" 12 Pt Univ	SU-1224	3/4" 12 Pt Univ
SU-1218	9/16" 12 Pt Univ	SU-1222	11/16" 12 Pt Univ		

SET No. WSS-12A

18 Hex Sockets in Cardboard Box

Total Weight, 4.5 lbs.

Add this "full range" hex socket set
to your master set. Particularly use-
ful on worn or rounded nuts and
bolt heads.*Use with Torque wrench required on models having
"Marsden" self-locking nuts on connecting rods.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-612	3/8" 6 Pt Skt	ST-620	5/8" 6 Pt Skt	ST-628	7/8" 6 Pt Skt
ST-614	7/16" 6 Pt Skt	ST-621	21/32" 6 Pt Skt	ST-630	15/16" 6 Pt Skt
ST-616	1/2" 6 Pt Skt	ST-622	11/16" 6 Pt Skt	ST-632	1" 6 Pt Skt
ST-618	9/16" 6 Pt Skt	ST-624	3/4" 6 Pt Skt	ST-634	1 1/16" 6 Pt Skt
*SF-618	9/16" 6 Pt Skt	ST-625	29/32" 6 Pt Skt	ST-636	1 1/8" 6 Pt Skt
ST-619	19/32" 6 Pt Skt	ST-626	13/16" 6 Pt Skt	ST-640	1 1/4" 6 Pt Skt

SET No. WSS-14

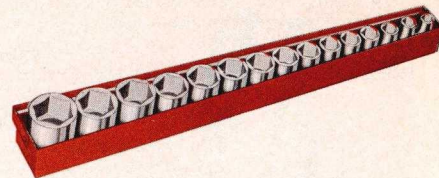
15 Hex Sockets

in TBT-5 Tray

16-7/8" x 1-1/4", Tapers

from 1" to 1-13/16"

Total Weight, 4.6 lbs.

A neat and useful way to keep sockets in your master set.
Tray has full length clip on back for hanging on front of chest
or cabinet near your work.

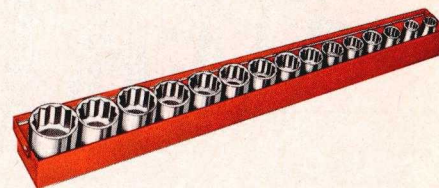
One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-612	3/8" 6 Pt Skt	ST-620	5/8" 6 Pt Skt	ST-630	15/16" 6 Pt Skt
ST-614	7/16" 6 Pt Skt	ST-622	11/16" 6 Pt Skt	ST-632	1" 6 Pt Skt
ST-616	1/2" 6 Pt Skt	ST-624	3/4" 6 Pt Skt	ST-634	1 1/16" 6 Pt Skt
ST-618	9/16" 6 Pt Skt	ST-626	13/16" 6 Pt Skt	ST-636	1 1/8" 6 Pt Skt
ST-619	19/32" 6 Pt Skt	ST-628	7/8" 6 Pt Skt	ST-640	1 1/4" 6 Pt Skt

SET No. WSS-1615 12-Point Sockets
in TBT-5 Tray

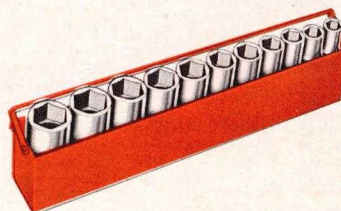
16-7/8" x 1-1/4", Tapers

from 1" to 1-13/16"

Total Weight, 4.5 lbs.

Finger tip accessibility is yours with this convenient tote
tray of sockets. Bale handle keeps sockets in place when stored
in your tool box.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1220	5/8" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt
ST-1214	7/16" 12 Pt Skt	ST-1222	11/16" 12 Pt Skt	ST-1232	1" 12 Pt Skt
ST-1216	1/2" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt
ST-1219	19/32" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt

**SET No. WSS-17**11 Deep 6-Point Sockets
in TBT-6 Tray

12-7/16" x 2-1/2",

Tapers from 15/16" to 1-5/8"

Total Weight, 5.4 lbs.

For those who prefer single hex or 6-point deep sockets, this
set covers all popular openings from 1/2 thru 1 1/8" by 16ths.
Packed in handy tote tray.

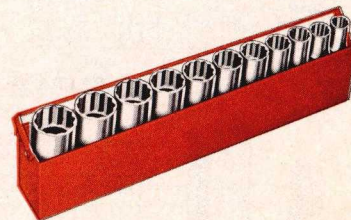
One Ea.	Description	One Ea.	Description	One Ea.	Description
SD-616	1/2" 6 Pt Dp	SD-624	3/4" 6 Pt Dp	SD-632	1" 6 Pt Dp
SD-618	9/16" 6 Pt Dp	SD-626	13/16" 6 Pt Dp	SD-634	1 1/16" 6 Pt Dp
SD-620	5/8" 6 Pt Dp	SD-628	7/8" 6 Pt Dp	SD-636	1 1/8" 6 Pt Dp
SD-622	15/16" 6 Pt Dp	SD-630	15/16" 6 Pt Dp		

SET No. WSS-1811 Deep 12-Point Sockets
in TBT-6 Tray

12-7/16" x 2-1/2", Tapers

from 15/16" to 1-5/8"

Total Weight, 5.4 lbs.

Here's a full range of deep sockets from 1/2 to 1 1/8" by
16ths. In this convenient tote tray they're always handy,
always ready to take on the job.

One Ea.	Description	One Ea.	Description	One Ea.	Description
SD-1216	1/2" 12 Pt Dp	SD-1224	3/4" 12 Pt Dp	SD-1232	1" 12 Pt Dp
SD-1218	9/16" 12 Pt Dp	SD-1226	13/16" 12 Pt Dp	SD-1234	1 1/16" 12 Pt Dp
SD-1220	5/8" 12 Pt Dp	SD-1228	7/8" 12 Pt Dp	SD-1236	1 1/8" 12 Pt Dp
SD-1222	15/16" 12 Pt Dp	SD-1230	15/16" 12 Pt Dp		



1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® SETS

SELECTED ALLOY STEEL

1/2"



SET No. WSS-1A
12 Tools in TB-5 Metal Tool Box
12-1/2" x 3-3/4" x 2-1/4"

SET No. WSS-1AH
Same as above
with all hex sockets

Total Weight, 5.4 lbs.

Fits all regular and finished series hex nuts and bolts and hex head cap screws 1/4 thru 5/8" diam. and heavy series hex nuts and bolts 1/4 thru 9/16" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1220	5/8" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt
ST-1214	7/16" 12 Pt Skt	ST-1222	11/16" 12 Pt Skt	ST-1230	13/16" 12 Pt Skt
ST-1216	1/2" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1232	1" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt	S-52	Ratchet



SET No. WSS-2A
9 Tools in TB-5 Metal Tool Box
12-1/2" x 3-3/4" x 2-1/4"

SET No. WSS-2AH
Same as above
with all hex sockets

Total Weight, 5.6 lbs.

An unusually handy set to have on hand where heavy series hex nuts and bolts 1/4 thru 3/4" diam. are in constant use.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1216	1/2" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt
ST-1222	1 1/16" 12 Pt Skt	ST-1230	1 3/16" 12 Pt Skt	S-52	Ratchet

SET No. WSS-4
20 Tools in TB-6 Metal Tool Box
12-1/2" x 3-3/4" x 2-1/4"

SET No. WSS-4H
Same as above with all hex
sockets except 3 1/2" and 1 3/16",
which are 12-point

Total Weight, 8.5 lbs.



This set fits all new and old regular, heavy and finished series hex nuts and bolts and hex head cap screws 1/4 thru 3/4" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1222	1 1/16" 12 Pt Skt	ST-1232	1" 12 Pt Skt
ST-1214	7/16" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt
ST-1216	1/2" 12 Pt Skt	ST-1226	1 3/16" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	ST-1238	1 1/16" 12 Pt Skt
ST-1219	1 3/32" 12 Pt Skt	ST-1230	1 1/4" 12 Pt Skt	ST-1240	1 1/2" 12 Pt Skt
ST-1220	5/8" 12 Pt Skt	ST-1232	1 1/2" 12 Pt Skt	S-52	Ratchet
ST-1221	2 1/32" 12 Pt Skt	ST-1234	1 5/8" 12 Pt Skt	.....	.....



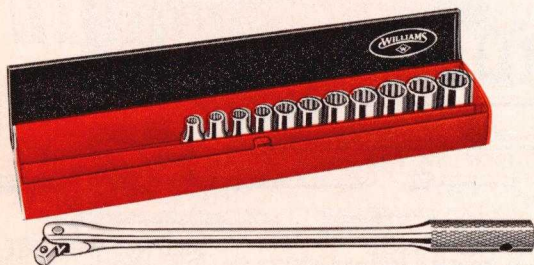
SET No. WSS-3A
11 Tools in TB-5 Metal Tool Box
12-1/2" x 3-3/4" x 2-1/4"

SET No. WSS-3AH
Same as above
with all hex sockets

Total Weight, 5.4 lbs.

This set fits all finished series hex nuts and bolts and hex head cap screws 1/4 thru 3/4" diam. and most regular and heavy series hex nuts and bolts 1/4 thru 3/4" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1214	7/16" 12 Pt Skt	ST-1222	1 1/16" 12 Pt Skt	ST-1230	1 3/16" 12 Pt Skt
ST-1216	1/2" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1226	1 3/16" 12 Pt Skt	S-52	Ratchet
ST-1220	5/8" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	.....	.....

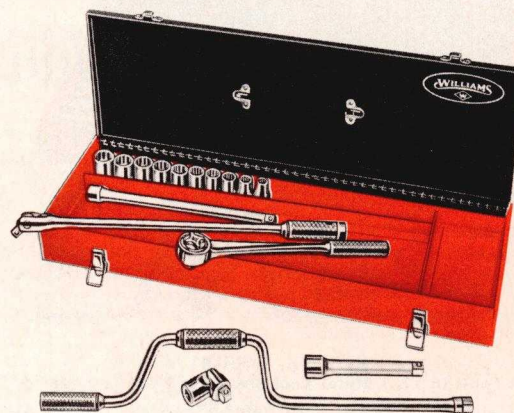


SET No. WSS-9
12 Tools in TB-17 Metal Tool Box, 17-3/4" x 3" x 2-1/16"

SET No. WSS-9H
Same as above with all hex sockets
Total Weight, 6.4 lbs.

Socket sizes ranging from 3/8" to 1" by sixteenths give this set an excellent range for general use. Flex Handle, 17" long, offers plenty of leverage. Metal case has sufficient space for the addition of larger sockets and other drive parts.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1220	5/8" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt
ST-1214	7/16" 12 Pt Skt	ST-1222	1 1/16" 12 Pt Skt	ST-1230	1 3/16" 12 Pt Skt
ST-1216	1/2" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-1232	1" 12 Pt Skt
ST-1218	9/16" 12 Pt Skt	ST-1226	1 3/16" 12 Pt Skt	S-41A	Flex Handle



SET No. WSS-5A
16 Tools in TB-7 Metal Tool Box, 23" x 7-3/4" x 2-1/4"

SET No. WSS-5AH
Same as above but with all hex sockets
Total Weight, 16 lbs.

With socket openings from 7/16" thru 1" by 16ths and the variety of drivers and extensions this makes an excellent mechanic's starter set for general work.

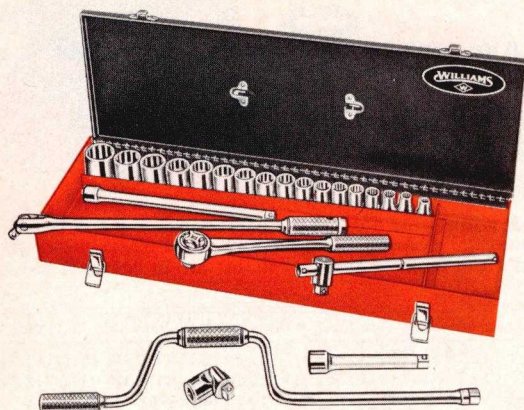
One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1214	7/16" 12 Pt Skt	ST-1226	1 3/16" 12 Pt Skt	S-15A	Speeder
ST-1216	1/2" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	S-41A	Flex Handle
ST-1218	9/16" 12 Pt Skt	ST-1230	1 3/16" 12 Pt Skt	S-52	Ratchet
ST-1220	5/8" 12 Pt Skt	ST-1232	1" 12 Pt Skt	S-110P	5 1/2" Ext'n
ST-1222	1 1/16" 12 Pt Skt	.....	.....	S-115P	10 1/2" Ext'n
ST-1224	3/4" 12 Pt Skt	.....	.....	S-140A	Universal Jt



1/2"

1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® SETS

SELECTED ALLOY STEEL

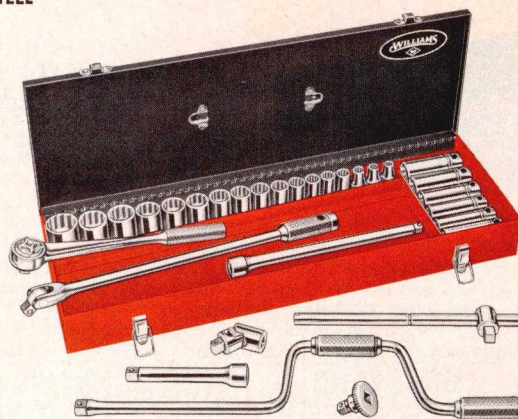
2
ALLOY
SOCKETS
AND
SETS

SET No. WSS-5

24 Tools in TB-7 Metal Tool Box, 23" x 7-3/4" x 2-1/4"
Total Weight, 19.1 lbs.

For the industrial or automotive mechanic this is an ideal, basic set with its full range of 12-point socket sizes from 3/8" thru 1 1/4". The variety of driver parts makes possible endless combinations to solve many otherwise difficult nut-turning problems encountered in maintenance, repair and set-up or assembly work.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1225	25/32" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt
ST-1214	7/16" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt	S-15A	Speeder
ST-1216	1/2" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	S-20A	Sliding Tee
ST-1218	9/16" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt	S-41A	Flex Handle
ST-1219	19/32" 12 Pt Skt	ST-1231	31/32" 12 Pt Skt	S-52	Ratchet
ST-1220	5/8" 12 Pt Skt	ST-1232	1" 12 Pt Skt	S-110P	5 1/2" Ext'n
ST-1222	11/16" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt	S-115P	10 1/2" Ext'n
ST-1224	3/4" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt	S-140A	Universal Jt

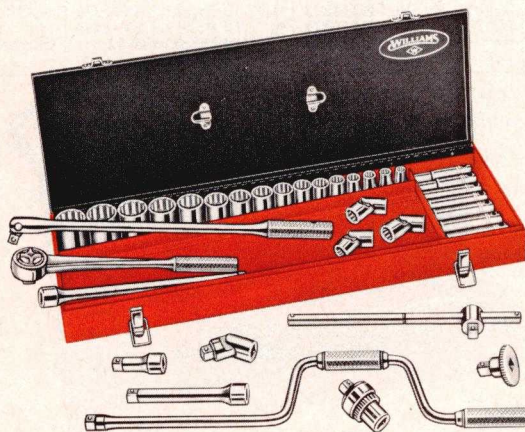


SET No. WSS-6A

31 Tools in TB-7 Metal Tool Box, 23" x 7-3/4" x 2-1/4"
Total Weight, 21.4 lbs.

This set has a more extensive range than the WSS-5 through the addition of the six most popular deep sockets, and the S-70 Ratchet Spinner which, when used with the S-52 Ratchet, allows the mechanic to "finger-spin" nuts until they are sufficiently tight for ratchet-turning action.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt	SD-1232	1" 12 Pt Dp
ST-1214	7/16" 12 Pt Skt	ST-1231	31/32" 12 Pt Skt	S-15A	Speeder
ST-1216	1/2" 12 Pt Skt	ST-1232	1" 12 Pt Skt	S-20A	Sliding Tee
ST-1218	9/16" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt	S-41A	Flex Handle
ST-1219	19/32" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt	S-52	Ratchet
ST-1220	5/8" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	S-70	Rcht Spinner
ST-1222	11/16" 12 Pt Skt	SD-1218	9/16" 12 Pt Dp	S-110P	5 1/2" Ext'n
ST-1224	3/4" 12 Pt Skt	SD-1220	5/8" 12 Pt Dp	S-115P	10 1/2" Ext'n
ST-1225	25/32" 12 Pt Skt	SD-1222	11/16" 12 Pt Dp	S-140A	Universal Jt
ST-1226	13/16" 12 Pt Skt	SD-1226	13/16" 12 Pt Dp	.....	.....
ST-1228	7/8" 12 Pt Skt	SD-1228	7/8" 12 Pt Dp	.....	.....

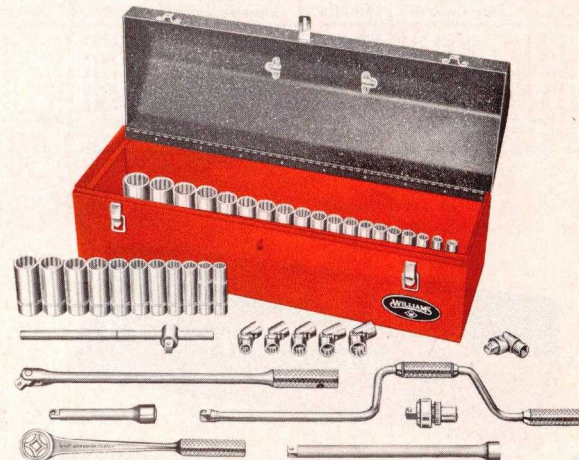


SET No. WSS-8

36 Tools in TB-7 Metal Tool Box, 23" x 7-3/4" x 2-1/4"
Total Weight, 23.4 lbs.

This particular combination of regular, deep and universal 12-point sockets covers the most popular opening sizes in the various styles. Coupled with the assortment of 10 handles and attachments, this set offers unusual versatility to the industrial or automotive mechanic.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt	SU-1222	1 1/16" 12 Pt Univ
ST-1214	7/16" 12 Pt Skt	ST-1238	13/16" 12 Pt Skt	SU-1224	3/4" 12 Pt Univ
ST-1216	1/2" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	S-15A	Speeder
ST-1218	9/16" 12 Pt Skt	ST-1242	15/16" 12 Pt Skt	S-20A	Sliding Tee
ST-1220	5/8" 12 Pt Skt	SD-1216	1/2" 12 Pt Dp	S-41A	Flex Handle
ST-1222	11/16" 12 Pt Skt	SD-1218	9/16" 12 Pt Dp	S-52	Ratchet
ST-1224	3/4" 12 Pt Skt	SD-1220	5/8" 12 Pt Dp	S-55A	Ratchet Adapt
ST-1226	13/16" 12 Pt Skt	SD-1222	11/16" 12 Pt Dp	S-70	Rcht Spinner
ST-1228	7/8" 12 Pt Skt	SD-1224	3/4" 12 Pt Dp	S-102P	2 1/2" Ext'n
ST-1230	15/16" 12 Pt Skt	SD-1226	13/16" 12 Pt Dp	S-110P	5 1/2" Ext'n
ST-1232	1" 12 Pt Skt	SD-1228	7/8" 12 Pt Dp	S-115P	10 1/2" Ext'n
ST-1234	1 1/16" 12 Pt Skt	SU-1220	5/8" 12 Pt Univ	S-140A	Universal Jt



SET No. WSS-7E

43 Tools in TB-8 Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 29.3 lbs.

SET No. WSS-7ET

43 Tools Only
Total Weight, 18.8 lbs.

This master set services all old and new regular, heavy and finished series hex nuts and bolts and hex head cap screws from 1/4" thru 3/4" diam. To add totetray to fit, order No. TBT-1.

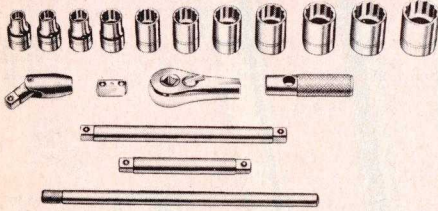
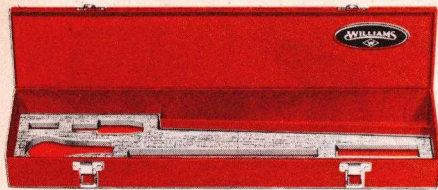
One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1234	1 1/16" 12 Pt Skt	SU-1216	1 1/2" 12 Pt Uni
ST-1214	7/16" 12 Pt Skt	ST-1236	1 1/8" 12 Pt Skt	SU-1218	1 1/16" 12 Pt Uni
ST-1216	1/2" 12 Pt Skt	ST-1238	13/16" 12 Pt Skt	SU-1220	5/8" 12 Pt Uni
ST-1218	9/16" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	SU-1222	1 1/16" 12 Pt Uni
ST-1219	19/32" 12 Pt Skt	SD-1216	1/2" 12 Pt Dp	SU-1224	3/4" 12 Pt Uni
ST-1220	5/8" 12 Pt Skt	SD-1218	9/16" 12 Pt Dp	S-15A	Speeder
ST-1221	21/32" 12 Pt Skt	SD-1220	5/8" 12 Pt Dp	S-20A	Sliding Tee
ST-1222	11/16" 12 Pt Skt	SD-1222	11/16" 12 Pt Dp	S-41A	Flex Handle
ST-1224	3/4" 12 Pt Skt	SD-1224	3/4" 12 Pt Dp	S-52	Ratchet
ST-1225	25/32" 12 Pt Skt	SD-1226	13/16" 12 Pt Dp	S-55A	Ratchet Adapt.
ST-1226	13/16" 12 Pt Skt	SD-1228	7/8" 12 Pt Dp	S-110P	5 1/2" Ext'n
ST-1228	7/8" 12 Pt Skt	SD-1230	15/16" 12 Pt Dp	S-115P	10 1/2" Ext'n
ST-1230	15/16" 12 Pt Skt	SD-1232	1" 12 Pt Dp	S-140A	Universal Jt
ST-1231	31/32" 12 Pt Skt	SD-1234	1 1/16" 12 Pt Dp	.....	.....
ST-1232	1" 12 Pt Skt	SD-1236	1 1/8" 12 Pt Dp	.....	.....



1/2 Inch SQUARE DRIVE STANDARD SUPERSOCKET® SETS

SELECTED ALLOY STEEL

1/2"



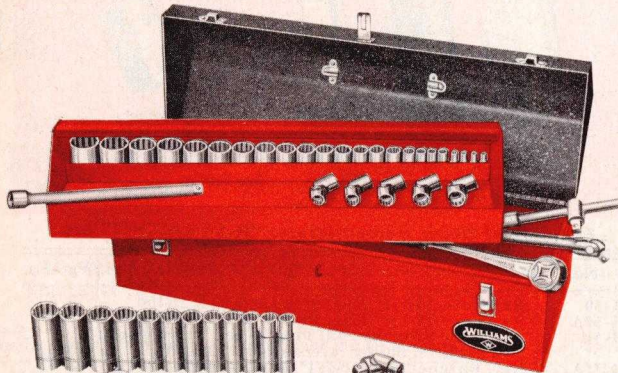
COMBO SET No. WSSP-1
18 Tools in TB-15 Metal Tool Box, 18" x 4-1/2" x 2"

COMBO SET No. WSSP-1H
Same as above but with all hex sockets

Total Weight, 8.1 lbs.

Seven basic drive parts make regular and flex head ratchets, tee and flex handles. Here is more toolpower than sets twice its size.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-1212	3/8" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	ST-40	Flex Head
ST-1214	7/16" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt	ST-50	Ratchet Head
ST-1216	1/2" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	ST-70	Grip
ST-1218	9/16" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt	ST-105	5" Ext'n
ST-1220	5/8" 12 Pt Skt	ST-1232	1" 12 Pt Skt	ST-108	8" Ext'n
ST-1222	15/16" 12 Pt Skt	ST-20	Tee Bar	ST-150	Connector



SET No. WSS-7G
60 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"

Total Weight, 40.1 lbs.

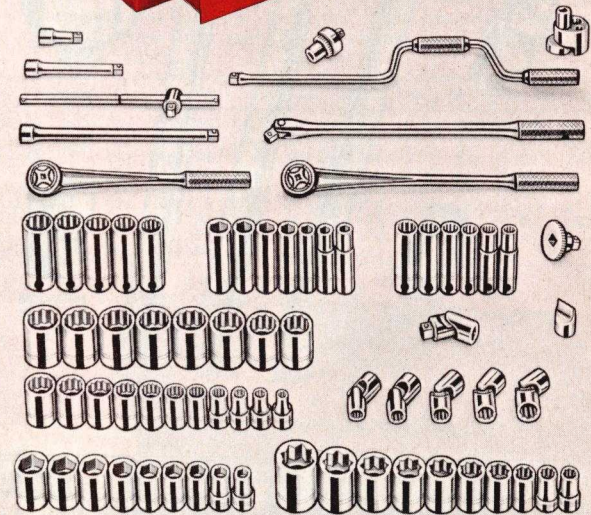
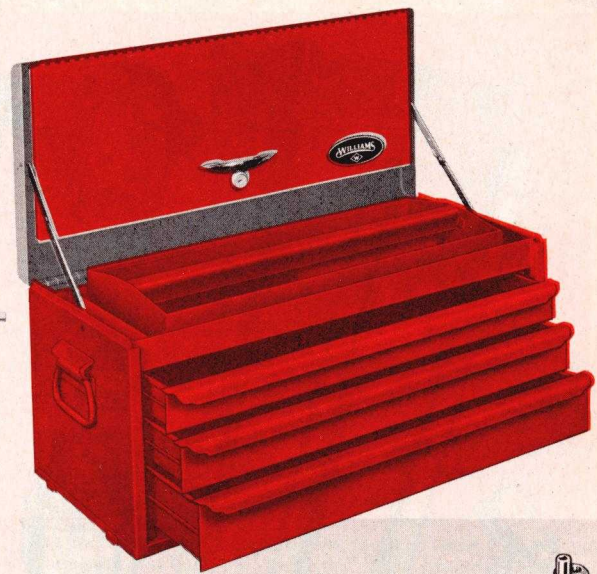
SET No. WSS-7GT

60 Tools Only

Total Weight, 25.5 lbs.

Here is a real master 1/2" drive set. The full range of 8-point sockets services square head cap screws up to 1" diam. and square head bolts and nuts up to 5/8" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-810	5/16" 8 Pt Skt	ST-1225	25/32" 12 Pt Skt	SD-1226	13/16" 12 Pt Dp
ST-812	3/8" 8 Pt Skt	ST-1226	13/16" 12 Pt Skt	SD-1228	7/8" 12 Pt Dp
ST-814	7/16" 8 Pt Skt	ST-1228	7/8" 12 Pt Skt	SD-1230	15/16" 12 Pt Dp
ST-816	1/2" 8 Pt Skt	ST-1230	15/16" 12 Pt Skt	SD-1232	1" 12 Pt Dp
ST-818	9/16" 8 Pt Skt	ST-1231	31/32" 12 Pt Skt	SD-1234	1 1/16" 12 Pt Dp
ST-820	5/8" 8 Pt Skt	ST-1232	1" 12 Pt Skt	SD-1236	1 1/8" 12 Pt Dp
ST-822	11/16" 8 Pt Skt	ST-1234	1 1/16" 12 Pt Skt	SU-1216	1 1/2" 12 Pt Uni
ST-824	3/4" 8 Pt Skt	ST-1236	1 1/8" 12 Pt Skt	SU-1218	9/16" 12 Pt Uni
ST-826	15/16" 8 Pt Skt	ST-1238	1 1/4" 12 Pt Skt	SU-1220	5/8" 12 Pt Uni
ST-828	1" 8 Pt Skt	ST-1240	1 1/2" 12 Pt Skt	SU-1222	11/16" 12 Pt Uni
ST-832	1 1/8" 8 Pt Skt	ST-1242	1 5/16" 12 Pt Skt	SU-1224	3/4" 12 Pt Uni
ST-1212	3/8" 12 Pt Skt	ST-1244	1 3/8" 12 Pt Skt	S-15A	Speeder
ST-1214	7/16" 12 Pt Skt	ST-1246	1 7/16" 12 Pt Skt	S-20A	Sliding Tee
ST-1216	1/2" 12 Pt Skt	ST-1248	1 1/2" 12 Pt Skt	S-41A	Flex Handle
ST-1218	9/16" 12 Pt Skt	SD-1216	1 1/8" 12 Pt Dp	S-52	Ratchet
ST-1219	5/8" 12 Pt Skt	SD-1218	9/16" 12 Pt Dp	S-55A	Ratchet Adapt.
ST-1220	11/16" 12 Pt Skt	SD-1220	5/8" 12 Pt Dp	S-70	Recht Spinner
ST-1221	3/4" 12 Pt Skt	SD-1222	11/16" 12 Pt Dp	S-110P	5 1/2" Ext'n
ST-1222	15/16" 12 Pt Skt	SD-1224	3/4" 12 Pt Dp	S-115P	10 1/2" Ext'n
ST-1224	1" 12 Pt Skt	SD-1225	25/32" 12 Pt Dp	S-140A	Universal Jt



SET No. WSS-19
74 Tools in TB-1001 Metal Tool Chest
22-5/8" x 10-1/8" x 10"

Total Weight, 68.4 lbs.

SET No. WSS-19T

74 Tools Only

Total Weight, 32.4 lbs.

Here is the largest and most versatile assortment in Williams wide selection of 1/2" drive socket sets. All tools can be conveniently and securely stored in this rugged three-drawer chest finished in red baked-on enamel.

One Ea.	Description	One Ea.	Description	One Ea.	Description
ST-616	1/2" 6 Pt Skt	ST-1244	13/8" 12 Pt Skt	SU-1224	3/4" 12 Pt Univ
ST-618	5/8" 6 Pt Skt	ST-1246	1 1/16" 12 Pt Skt	ST-812	3/8" 8 Pt Skt
ST-620	3/4" 6 Pt Skt	ST-1248	1 1/2" 12 Pt Skt	ST-814	7/16" 8 Pt Skt
ST-622	7/8" 6 Pt Skt	SD-616	1 1/2" 6 Pt Dp	ST-816	1/2" 8 Pt Skt
ST-624	1" 6 Pt Skt	SD-618	9/16" 6 Pt Dp	ST-818	9/16" 8 Pt Skt
ST-626	1 1/8" 6 Pt Skt	SD-620	5/8" 6 Pt Dp	ST-820	5/8" 8 Pt Skt
ST-628	1 1/4" 6 Pt Skt	SD-622	11/16" 6 Pt Dp	ST-822	11/16" 8 Pt Skt
ST-630	1 1/2" 6 Pt Skt	SD-624	3/4" 6 Pt Dp	ST-824	3/4" 8 Pt Skt
ST-632	1 5/8" 6 Pt Skt	SD-626	13/16" 6 Pt Dp	ST-826	15/16" 8 Pt Skt
ST-1212	3/8" 12 Pt Skt	SD-628	7/8" 6 Pt Dp	ST-828	7/8" 8 Pt Skt
ST-1214	7/16" 12 Pt Skt	SD-1216	1 1/8" 12 Pt Dp	ST-832	1" 8 Pt Skt
ST-1216	1/2" 12 Pt Skt	SD-1218	9/16" 12 Pt Dp	S-15A	Speeder
ST-1218	9/16" 12 Pt Skt	SD-1220	5/8" 12 Pt Dp	S-20A	Sliding Tee
ST-1220	11/16" 12 Pt Skt	SD-1222	11/16" 12 Pt Dp	SB-30	Socket Bit
ST-1222	15/16" 12 Pt Skt	SD-1224	3/4" 12 Pt Dp	S-41A	Flex Handle
ST-1224	1" 12 Pt Skt	SD-1226	13/16" 12 Pt Dp	S-52	11 1/4" Ratchet
ST-1226	1 1/8" 12 Pt Skt	SD-1228	7/8" 12 Pt Dp	S-53	15" Ratchet
ST-1228	1 1/4" 12 Pt Skt	SD-1230	15/16" 12 Pt Dp	S-55A	Ratchet Adapt
ST-1230	1 1/2" 12 Pt Skt	SD-1232	1" 12 Pt Dp	S-60C	Stud Remover
ST-1232	1 5/8" 12 Pt Skt	SD-1234	1 1/16" 12 Pt Dp	S-70	Recht Spinner
ST-1234	1 3/8" 12 Pt Skt	SD-1236	1 1/8" 12 Pt Dp	S-102P	2 1/2" Ext'n
ST-1236	1 1/2" 12 Pt Skt	SU-1216	1 1/2" 12 Pt Univ	S-110P	5 1/2" Ext'n
ST-1238	1 5/8" 12 Pt Skt	SU-1218	9/16" 12 Pt Univ	S-115P	10 1/2" Ext'n
ST-1240	1 3/4" 12 Pt Skt	SU-1220	5/8" 12 Pt Univ	S-140A	Universal Jt
ST-1242	1 7/8" 12 Pt Skt	SU-1222	11/16" 12 Pt Univ	.....	.....



3/4"

3/4 Inch SQUARE DRIVE HEAVY DUTY SUPERSOCKET® WRENCHES

SELECTED ALLOY STEEL

2 ALLOY SOCKETS AND SETS



MILITARY DESCRIPTION: GGG-W-641D-3

No.	PIECE	Wgt. Ea.
H-A1	Handle with Knurled Grip, 20" long, for H-51A Head	4.3
H-A2	Plain Handle, 20" long, for H-51A Ratchet Head..	2.9
H-20A	Sliding T Handle—17-1/2" long.....	2.7
H-41A	Flex Handle—20" long; flexible head, knurled grip	4.1

REGULAR 12-POINT SOCKETS

MILITARY DESCRIPTION: GGG-W-641D-3, TYPE II, CLASS 2, STYLE A

	Opening	No.	Nose Diam.	Depth Opng.	Length	Wgt., Lbs.
	3/4	H-1224	1- 1/8	9/16	2	.43
	13/16	H-1226	1- 7/32	5/8	2	.45
	7/8	H-1228	1- 5/16	21/32	2	.49
	15/16	H-1230	1- 3/8	21/32	2	.50
	31/32	H-1231	1-27/64	11/16	2- 1/16	.52
H-1224 - H-1230	1	H-1232	1-29/64	3/4	2- 1/16	.50
	1- 1/16	H-1234	1-33/64	3/4	2- 1/8	.55
	1- 1/8	H-1236	1-37/64	13/16	2- 3/16	.63
	1- 3/16	H-1238	1-11/16	13/16	2- 1/4	.73
	1- 1/4	H-1240	1- 3/4	7/8	2- 1/4	.75
	1- 5/16	H-1242	1-13/16	15/16	2- 5/16	.79
	1- 3/8	H-1244	1- 7/8	1	2- 3/8	.85
	1- 7/16	H-1246	1-15/16	1- 1/16	2- 7/16	.94
	1- 1/2	H-1248	2- 1/16	1- 1/8	2- 1/2	1.1
	1- 9/16	H-1250	2- 1/8	1- 5/32	2- 9/16	1.1
H-1231 - H-1236	1- 5/8	H-1252	2- 3/16	1- 3/16	2- 5/8	1.2
	1-11/16	H-1254	2- 5/16	1- 7/32	2- 3/4	1.4
	1- 3/4	H-1256	2- 3/8	1- 1/4	2-13/16	1.4
	1-13/16	H-1258	2- 1/2	1- 9/32	2-13/16	1.8
	1- 7/8	H-1260	2- 5/8	1-11/32	2-29/32	1.9
	2	H-1264	2-23/32	1-13/32	3	2.2
	2- 1/16	H-1266	2-13/16	1- 7/16	3- 1/8	2.5
	2- 1/8	H-1268	2-27/32	1- 1/2	3- 1/4	2.6
	2- 3/16	H-1270	2-57/64	1-17/32	3- 3/8	2.8
	2- 1/4	H-1272	2-31/32	1- 9/16	3- 1/2	3.
H-1238 - H-1276	2- 5/16	H-1274	3- 1/8	1- 9/16	3- 1/2	3.1
	2- 3/8	H-1276	3- 1/2	1- 5/8	3- 5/8	3.3

Example of Order Nomenclature: "H-51 RATCHET" etc.

No.	PIECE	Wgt. Ea.
H-50	Ratchet—18-1/2" long; with Connector H-150....	5.3
H-50A	Ratchet—18-1/2" long; without plug connector....	5.1
H-51	Reversible Ratchet—19" long, 24 gear teeth instead of usual 16. Shifter reverses action instantly....	5.4
H-51A	Rev. Ratchet Head, 6-1/4" mech. same as H-51....	3.5
H-51A1	Rev. Ratchet Head with Knurled Handle, 24-1/2"....	7.8
H-51A2	Rev. Ratchet Head with Plain Handle, 24-1/2"....	6.4
H-55	Ratchet Adapter—41 Teeth. 3-7/8" long; outside diameter 2 1/2". Knurled shifter reverses action instantly.	3.0
H-104	Extension Bar—4" long.....	.88
H-110	Extension Bar—8" long.....	1.5
H-115	Extension Bar—15-1/2" long.....	2.8
HNX-130	Adapter, 3/4" square female and 1" square male....	1.7
HNX-131	Adapter, 3/4" square male and 1" square female....	1.1
H-140A	Universal Joint—range approx. 140°.....	1.2
H-150	Ratchet Plug Connector.....	.27
HX-151	Adapter, 3/4" square male and 1" square male....	.44

FOR DETAILED PRODUCT INFORMATION
ASK FOR TECHNICAL BULLETIN No. TB-122

EXTRA DEEP 6-POINT SOCKETS

Designed for heavy service. 6-point openings are excellent for use on worn or rounded nuts.

	Opening	No.	Nose Diam.	Depth Opng.	Length	Wgt. Lbs.
	7/8	HD-628	1- 5/16	23/32	3-1/2	.80
	15/16	HD-630	1- 3/8	7/8	3-1/2	.81
1	1	HD-632	1-27/64	13/16	3-1/2	.83
	1- 1/16	HD-634	1-35/64	1	3-1/2	.98
1- 1/8	1- 1/8	HD-636	1-39/64	27/32	3-1/2	1.1
1- 1/4	1- 1/4	HD-640	1-47/64	1- 3/16	3-1/2	1.3
1- 5/16	1- 5/16	HD-642	1-55/64	15/16	3-1/2	1.4
1- 3/8	1- 3/8	HD-644	1-59/64	1	3-1/2	1.5
1- 7/16	1- 7/16	HD-646	1-63/64	1- 5/16	3-1/2	1.6
1- 1/2	1- 1/2	HD-648	2- 3/64	1- 1/8	3-1/2	1.8
1- 5/8	1- 5/8	HD-652	2-15/64	1- 3/16	3-1/2	2.

FOR INDUSTRIAL BLACK FINISH RATCHETS AND DRIVERS SEE PAGE 74.



3/4 Inch SQUARE DRIVE HEAVY DUTY SUPERSOCKET® SETS

SELECTED ALLOY STEEL

3/4"



No. HPA-51 RATCHET REPAIR KIT

For H-51 and H-51A Superratchets
In Cardboard Box
Weight, 8 lbs.

In addition to parts listed below, kit contains complete repair instructions.

Replacement Parts are also sold separately

No.	Qty.	Description	No.	Qty.	Description	No.	Qty.	Description
H-51-1	2	Ring (Gland)	H-51-4	6	Bearing Pin	H-51-7	6	Shifter Pin
H-51-2	6	Ratchet Gear	H-51-5	6	Spring	H-51-8	6	Plunger (Ball)
H-51-3	6	Dog (Pawl)	H-51-6	2	Shifter Bolt	H-51W	1	Spanner

No. H-41RK FLEX HANDLE REPAIR KIT

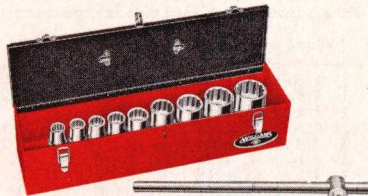
Total Weight .39 lbs.

For fast, efficient repair of new design H-41A Flex Handle. Complete instructions included with kit.

No.	Qty.	Description	No.	Qty.	Description	No.	Qty.	Description
H-41-1	1	Drive Tang	H-41-2	1	Spring	H-41-3	1	Hinge Pin

SET No. WSH-1B

10 Tools in TB-10 Tool Box
20-3/4" x 5-1/4" x 4-1/4"
Total Weight, 20.7 lbs.

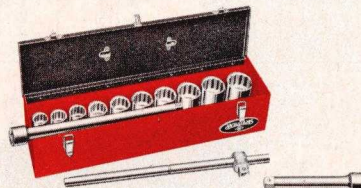


This set fits all new and old heavy series hex nuts and bolts 7/16" thru 1 1/4" diameters.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
H-1224	3/4" Skt	H-1234	1 1/16" Skt	H-1252	1 3/8" Skt	H-20A	Sliding Tee
H-1228	7/8" Skt	H-1240	1 1/4" Skt	H-1258	1 13/16" Skt	.....	.....
H-1230	1 1/16" Skt	H-1246	1 1/16" Skt	H-1264	2" Skt	.....	.....

SET No. WSH-2A

13 Tools in TB-10 Tool Box
20-3/4" x 5-1/4" x 4-1/4"
Total Weight, 26.3 lbs.

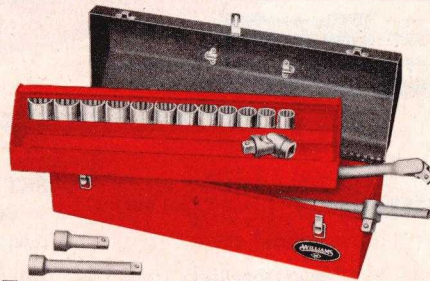


Sockets fit all new and old regular and heavy series hex nuts and bolts 5/8" thru 1 1/8" diam. and all finished series hex nuts and bolts and hex head cap screws 3/4" thru 1 1/8" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
H-1232	1" Skt	H-1242	1 1/16" Skt	H-1254	1 13/16" Skt	H-115	15 1/2" Ext'n
H-1234	1 1/16" Skt	H-1246	1 1/16" Skt	H-1258	1 13/16" Skt	.....	.....
H-1236	1 1/8" Skt	H-1248	1 1/2" Skt	H-20A	Sliding Tee	.....	.....
H-1240	1 1/4" Skt	H-1252	1 5/8" Skt	H-110	8" Ext'n	.....	.....

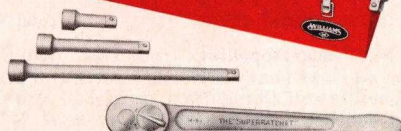
SET No. WSH-3A

19 Tools in TB-9T Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 48.3 lbs.



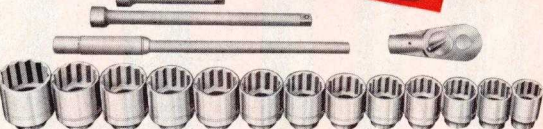
SET No. WSH-3AT

19 Tools Only
Total Weight, 33.7 lbs.



A basic set with sockets to fit all old and new regular and heavy series nuts and bolts 5/8" thru 1 1/4" diam. and all finished series nuts and bolts and hex head cap screws 3/4" thru 1 1/4".

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
H-1232	1" Skt	H-1246	1 1/16" Skt	H-1260	1 3/8" Skt	H-51	Ratchet
H-1234	1 1/16" Skt	H-1248	1 1/2" Skt	H-1264	2" Skt	H-104	4" Ext'n
H-1236	1 1/8" Skt	H-1252	1 5/8" Skt	H-20A	Sliding Tee	H-110	8" Ext'n
H-1240	1 1/4" Skt	H-1254	1 13/16" Skt	H-41A	Flex Handle	H-115	15 1/2" Ext'n
H-1242	1 1/16" Skt	H-1258	1 13/16" Skt	.....	.....	H-140A	Universal Jt



SET No. WSH-4B

35 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 73.5 lbs.

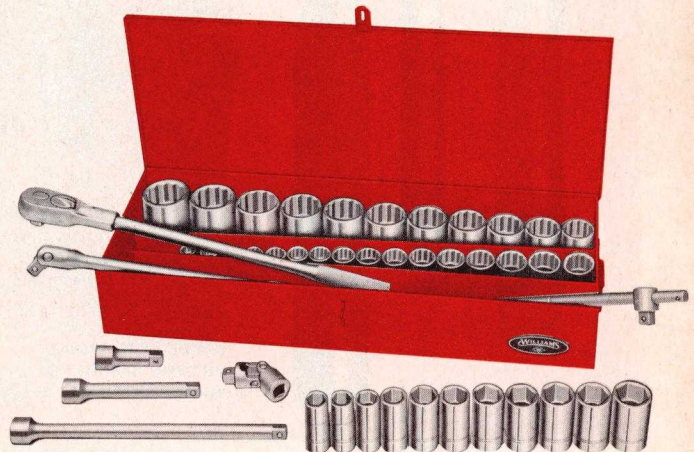
SET No. WSH-4BT

35 Tools Only

Total Weight, 59 lbs.

A master range of socket sizes to fit all new and old heavy series nuts and bolts 7/16" thru 1 1/2" diam. and most regular and finished series nuts and bolts and hex head cap screws 1/2" thru 1 1/2" diam.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
H-1224	3/4" Skt	H-1240	1 1/4" Skt	H-1258	1 13/16" Skt	H-A1	Handle
H-1226	1 1/16" Skt	H-1242	1 1/8" Skt	H-1260	1 3/8" Skt	H-20A	Sliding Tee
H-1228	7/8" Skt	H-1244	1 1/8" Skt	H-1264	2" Skt	H-41A	Flex Handle
H-1230	1 1/16" Skt	H-1246	1 1/16" Skt	H-1266	2 1/16" Skt	H-51A	Ratchet H'd
H-1231	3 1/32" Skt	H-1248	1 1/2" Skt	H-1268	2 1/8" Skt	H-104	4" Ext'n
H-1232	1" Skt	H-1250	1 1/16" Skt	H-1270	2 1/16" Skt	H-110	8" Ext'n
H-1234	1 1/16" Skt	H-1252	1 5/8" Skt	H-1272	2 1/4" Skt	H-115	15 1/2" Ext'n
H-1236	1 1/8" Skt	H-1254	1 13/16" Skt	H-1274	2 5/16" Skt	H-140A	Universal Jt
H-1238	1 1/8" Skt	H-1256	1 3/4" Skt	H-1276	2 3/8" Skt	.....	.....



SET No. WSH-5

46 Tools in TB-12 Metal Tool Box
30-1/4" x 11-1/2" x 4-3/4"
Total Weight, 87.6 lbs.

SET No. WSH-5T

46 Tools Only

Total Weight, 61.2 lbs.

Here is a full complement of regular length and extra deep sockets and drive attachments to solve all new and old series nut and bolt turning problems from 7/16" thru 1 1/2" diameters. Set will also service most regular and finished series nuts and bolts and hex head cap screws 1/2" thru 1 1/2" diameters.

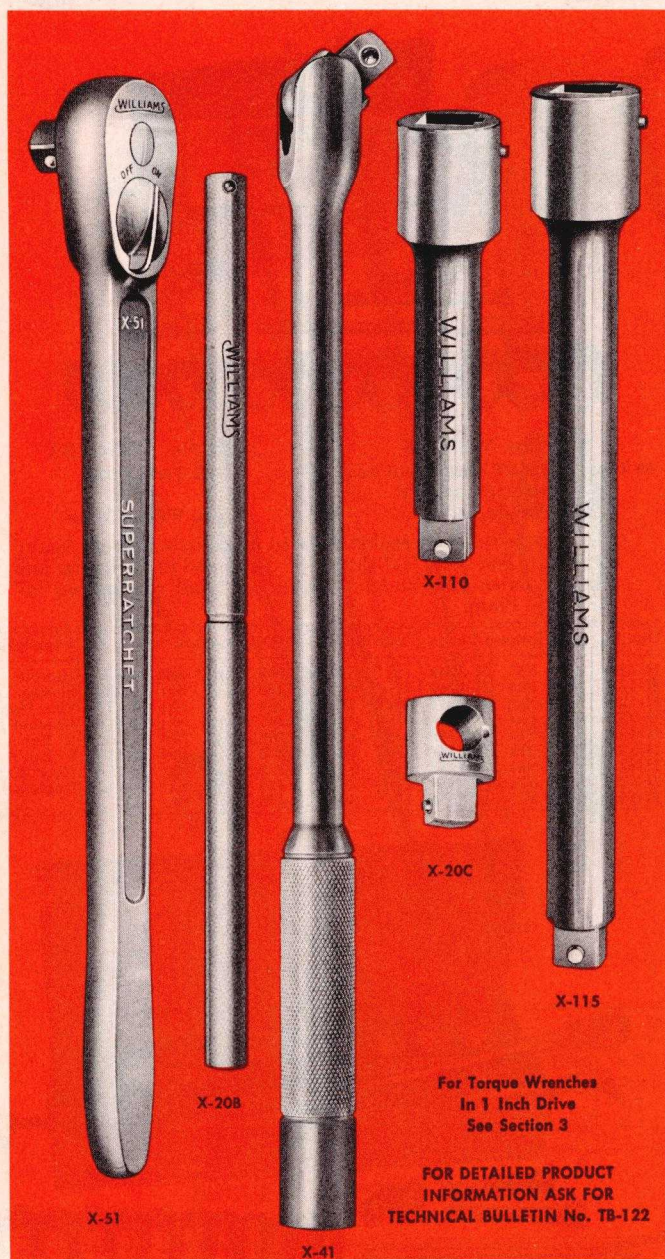
One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
H-1224	3/4" Skt	H-1246	1 1/16" Skt	H-1272	2 1/4" Skt	HD-648	1 1/2" Skt
H-1226	1 1/16" Skt	H-1248	1 1/2" Skt	H-1274	2 5/16" Skt	HD-652	1 3/4" Skt
H-1228	7/8" Skt	H-1250	1 1/8" Skt	H-1276	2 3/8" Skt	H-A1	Handle
H-1230	1 1/16" Skt	H-1252	1 5/8" Skt	HD-628	2 1/8" Skt	H-20A	Sliding Tee
H-1231	3 1/32" Skt	H-1254	1 13/16" Skt	HD-630	1 1/16" Skt	H-41A	Flex Handle
H-1232	1" Skt	H-1256	1 3/4" Skt	HD-632	1" Skt	H-51A	Ratchet H'd
H-1234	1 1/16" Skt	H-1258	1 13/16" Skt	HD-634	1 1/8" Skt	H-104	4" Ext'n
H-1236	1 1/8" Skt	H-1260	1 3/8" Skt	HD-636	1 1/8" Skt	H-110	8" Ext'n
H-1238	1 1/8" Skt	H-1264	2" Skt	HD-640	1 1/4" Skt	H-115	15 1/2" Ext'n
H-1240	1 1/4" Skt	H-1266	2 1/16" Skt	HD-642	1 5/16" Skt	.....	.....
H-1242	1 1/16" Skt	H-1268	2 1/8" Skt	HD-644	1 3/8" Skt	.....	.....
H-1244	1 3/8" Skt	H-1270	2 5/16" Skt	HD-646	1 7/16" Skt	.....	.....

1"

1 Inch SQUARE DRIVE EXTRA HEAVY DUTY SUPERSOCKET® WRENCHES

SELECTED ALLOY STEEL

2 ALLOY SOCKETS AND SETS



For Torque Wrenches
in 1 Inch Drive
See Section 3

FOR DETAILED PRODUCT
INFORMATION ASK FOR
TECHNICAL BULLETIN No. TB-122

Example of Order Nomenclature: "X-51 RATCHET"

MILITARY DESCRIPTION: GGG-W-641D-3

No.	PIECE	Wgt. Ea.
X-20B	Sliding Handle—1" diam., 20" long	4.4
X-20C	Adapter—for Sliding Handle X-20B	1.4
X-41	Flex Handle 27" long; flexible head, knurled grip	9.3
X-51	Reversible Ratchet—25" long, 24 teeth in Ratchet gear instead of usual 16. Shift lever reverses action instantly	11.5
X-110	Extension Bar—9" long	3.7
X-115	Extension Bar—18" long	7.1

X-51 RATCHET REPAIR PARTS

No.	Description	No.	Description
X-51-1	Ring (Gland)	X-51-6	Shifter Bolt
X-51-2	Ratchet Gear	X-51-7	Shifter Bolt Pin
X-51-3	Dog (Pawl)	X-51-8	Plunger (Ball)
X-51-4	Bearing Pin	X-51W	Spanner
X-51-5	Spring (Plunger)		

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



X-1234 - X-1240

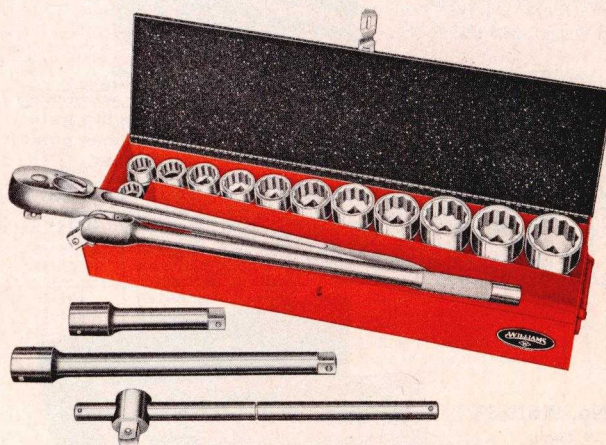


X-1244 - X-12100

Will rotate nuts completely where the handle can be swung only 30°. Another feature is the "Lock-Socket" device which provides a positive lock between the sockets and attachments. To release the "Lock-Socket" simply press the button on the socket and pull. Made from Selected Alloy Steel, heat-treated, chrome-plated.

MILITARY DESCRIPTION: GGG-W-641D-3, TYPE II, CLASS 2, STYLE A

Opening	No.	Nose Diam.	Depth Opng.	Length	Wgt. Ea.
1- 1/16	X-1234	1-5/8	27/32	2-23/32	1.1
1- 1/8	X-1236	1-3/4	27/32	2-13/16	1.2
1- 1/4	X-1240	1-7/8	7/8	2- 7/8	1.2
1- 5/16	X-1242	2	15/16	2- 7/8	1.3
1- 3/8	X-1244	2-1/16	29/32	2-15/16	1.3
1- 7/16	X-1246	2-1/8	1- 1/16	2-15/16	1.3
1- 1/2	X-1248	2-1/4	1- 1/8	3	1.4
1- 5/8	X-1252	2-3/8	1- 3/16	3- 1/16	1.9
1-13/16	X-1258	2-5/8	1- 9/32	3- 1/4	2.1
1- 7/8	X-1260	2-3/4	1-11/32	3- 3/8	2.3
2	X-1264	2-7/8	1- 7/16	3- 1/2	2.4
2- 1/8	X-1268	3	1- 1/2	3- 5/8	3.
2- 3/16	X-1270	3-1/8	1-17/32	3- 3/4	3.
2- 1/4	X-1272	3-1/4	1- 9/16	3- 7/8	3.3
2- 3/8	X-1276	3-3/8	1- 5/8	4	3.6
2- 1/2	X-1280	3-3/8	1-11/16	4	3.2
2- 9/16	X-1282	3-9/16	1-29/32	4	5.4
2- 5/8	X-1284	3-3/4	1-29/32	4	6.3
2- 3/4	X-1288	3-7/8	2- 1/16	4- 1/4	6.7
2-15/16	X-1294	4-1/8	2- 1/16	4- 1/4	7.2
3- 1/8	X-12100	4-5/16	2- 5/16	4- 1/2	8.3



SET No. WSX-1

18 Tools in TB-11 Metal Tool Box

29-1/4" x 8" x 4-1/4"

Total Weight, 79 lbs.

SET No. WSX-1T

18 Tools Only

Total Weight, 64.1 lbs.

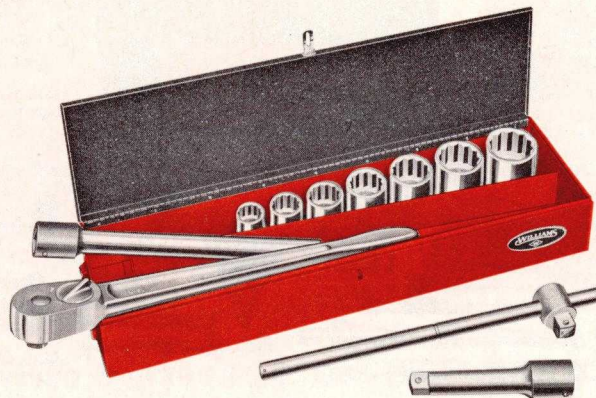
With socket openings from 1 1/16" thru 2 3/8" this set fits all new and old heavy series hex nuts and bolts 5/8" thru 1 1/2" diameters and all regular and finished series hex nuts and bolts and hex head cap screws (old or new) 3/4" thru 1 1/2" diameters except 1/8" sizes. Ratchet and other drive parts are ruggedly built for heavy duty work.

One Ea.	Description	One Ea.	Description	One Ea.	Description
X-1234	1 1/16" 12 Pt Skt	X-1258	1 13/16" 12 Pt Skt	X-20B	Sliding Handle
X-1236	1 1/8" 12 Pt Skt	X-1260	1 7/8" 12 Pt Skt	X-20C	Adapter
X-1240	1 1/4" 12 Pt Skt	X-1264	2" 12 Pt Skt	X-41	Flex Handle
X-1246	1 5/16" 12 Pt Skt	X-1270	2 1/16" 12 Pt Skt	X-51	Ratchet
X-1248	1 3/8" 12 Pt Skt	X-1272	2 1/4" 12 Pt Skt	X-110	9" Extension
X-1252	1 5/8" 12 Pt Skt	X-1276	2 3/8" 12 Pt Skt	X-115	18" Extension



1 Inch SQ. DRIVE SUPERSOCKET® SETS

SELECTED ALLOY STEEL

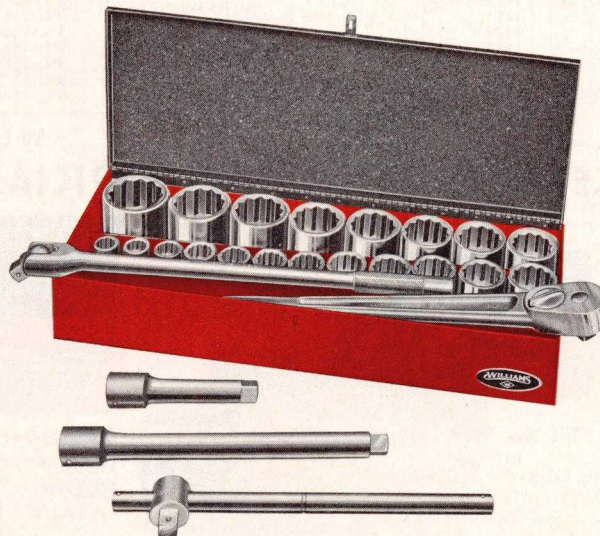


SET No. WSX-3
12 Tools in TB-11 Metal Tool Box
29-1/4" x 8" x 4-1/4"
Total Weight, 60.8 lbs.

SET No. WSX-3T
12 Tools Only
Total Weight, 45.9 lbs.

Sockets in this set fit a popular size range of heavy series hex nuts and bolts 3/4" thru 1 1/2" diameters. This is a handy set for contractors having equipment or having frequent installation work within this range of sizes. Heavy duty metal case has ample space for additional sockets or other tools.

One Ea.	Description	One Ea.	Description	One Ea.	Description
X-1240	1 1/4" 12 Pt Skt	X-1264	2" 12 Pt Skt	X-20C	Adapt for X-20B
X-1246	1 1/16" 12 Pt Skt	X-1270	2 3/16" 12 Pt Skt	X-51	Rev Reht, 25"
X-1252	1 3/8" 12 Pt Skt	X-1276	2 3/8" 12 Pt Skt	X-110	9" Ext'n Bar
X-1258	1 3/16" 12 Pt Skt	X-20B	Sliding Hdl, 20" lg	X-115	18" Ext'n Bar



SET No. WSX-4A
27 Tools in TB-12 Metal Tool Box
30-1/4" x 11-1/2" x 4-3/4"
Total Weight, 133.2 lbs.

SET No. WSX-4AT
27 Tools Only
Total Weight, 106.8 lbs.

Range of sizes fits all new and old heavy series hex nuts and bolts 5/8" thru 2" diameters and all, old or new, regular and finished series hex nuts and bolts and hex head cap screws 3/4" thru 1 3/4" diameters except 1/8" sizes.

One Ea.	Description	One Ea.	Description	One Ea.	Description
X-1234	1 1/16" 12 Pt Skt	X-1260	1 7/8" 12 Pt Skt	X-1288	2 3/4" 12 Pt Skt
X-1236	1 1/8" 12 Pt Skt	X-1264	2" 12 Pt Skt	X-1294	2 5/16" 12 Pt Skt
X-1240	1 1/4" 12 Pt Skt	X-1268	2 1/8" 12 Pt Skt	X-12100	3 1/8" 12 Pt Skt
X-1242	1 1/16" 12 Pt Skt	X-1270	2 3/16" 12 Pt Skt	X-20B	Sliding Handle
X-1244	1 3/8" 12 Pt Skt	X-1272	2 1/4" 12 Pt Skt	X-20C	Adapt r-X-20B
X-1246	1 7/16" 12 Pt Skt	X-1276	2 3/8" 12 Pt Skt	X-41	Flex Handle
X-1248	1 1/2" 12 Pt Skt	X-1280	2 1/2" 12 Pt Skt	X-51	Ratchet
X-1252	1 5/8" 12 Pt Skt	X-1282	2 9/16" 12 Pt Skt	X-110	9" Extension
X-1258	1 3/16" 12 Pt Skt	X-1284	2 5/8" 12 Pt Skt	X-115	18" Extension



MASTER ELECTRICAL INSTALLATION and MAINTENANCE SET

SET No. WSC-2A

114 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 38.9 lbs.

SET No. WSC-2AT

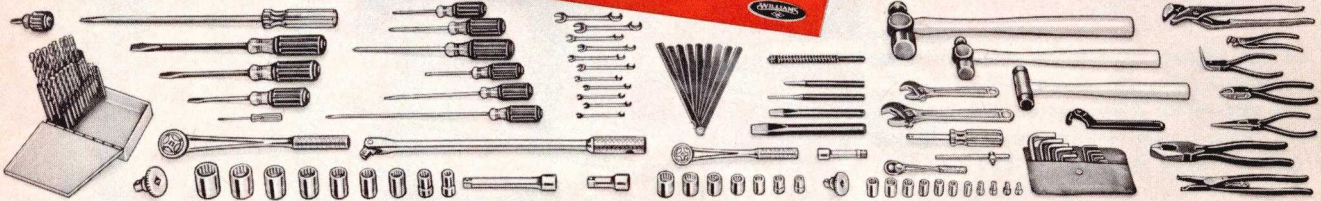
114 Tools Only
Total Weight, 24.3 lbs.



1/4" Drive—3 Drive Parts, 11 Sockets
3/8" Drive—3 Drive Parts, 7 Sockets
1/2" Drive—5 Drive Parts, 9 Sockets

11 15°-75° Midget Open-End Wrs—1 Spanner
2 Adjustable Wrs—12 Screwdrivers—7 Pliers

3 Hammers—2 Chisels—2 Punches—1 Feeler Gauge
13 Hex Wrs—21 H. S. Drills—1 Carbide Drill

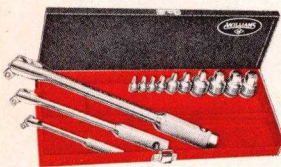


This master electrical set provides the broad range of tools required for installation and maintenance of all types of electrical apparatus. Special tools for conduit work are not included.

Hip roof metal case with tote tray may be easily carried to the job with the assurance that the proper tools will be right at hand. This also makes an excellent set for bench work.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE		15°-75° OPEN END WRS		SCREWDRIVERS		CHISELS & PUNCHES	
M-20A	Sliding Tee	B-70	Reht Spinner	ST-1218	9/16" 12 Pt Skt	1122	1 1/32"x1 1/32" opng	DEG-46	6" Electr'n	C-16	3/4" Cold
M-51	Ratchet	B-108	3" Ext'n	ST-1220	5/8" 12 Pt Skt	1124	3/8"x3/8" opng	DEG-50	10" Electr'n	C-24	3/4" Cold
M-106	Spinner Hdl	B-1212	3/8" 12 Pt Skt	ST-1222	1 1/16" 12 Pt Skt	1128	7/16"x7/16" opng	DE-52	2 1/4" Pocket	P-4	1/8" Pin Pch
M-604	1/8" 6 Pt Skt	B-1214	7/16" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	1132	1/2"x1/2" opng	DSG-62	1 1/4" Stubby	P-40	1/8" Center Pch
M-605	5/32" 6 Pt Skt	B-1216	1/2" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt	MISC. WRS		DPG-1	Phillips No. 1	MISC. TOOLS	
M-606	3/16" 6 Pt Skt	B-1218	9/16" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	AP-6	6" Adj Wr	DPG-2	Phillips No. 2	HBP-2-0	3/4 lb. Hammer
M-607	3/32" 6 Pt Skt	B-1220	5/8" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt	AP-8	8" Adj Wr	DPG-3	Phillips No. 3	HBP-4	2 lb. Hammer
M-608	1/4" 6 Pt Skt	B-1222	1 1/16" 12 Pt Skt	ST-1232	1" 12 Pt Skt	471	Spanner Wr	PLIERS		HBF-10M	Medium Tip
M-609	5/32" 6 Pt Skt	B-1224	3/4" 12 Pt Skt	15°-75° OPEN END WRS		SCREWDRIVERS		PL-46C	6" Diag Cut	HSF-10S	Soft Tip
M-1210	5/16" 12 Pt Skt	1/2" DRIVE		1112	3/16"x3/16" opng	DSG-4	4" Sq Blade	PL-76C	6" Chain Nose	HSF-100	Hammer Body
M-1211	1 1/32" 12 Pt Skt	S-41A	Flex Handle	1113	1 1/64"x1 1/64" opng	DSG-6	6" Sq Blade	PL-126C	6" Bent Needle	WS-44A	13 Hex Wrs
M-1212	3/8" 12 Pt Skt	S-52	Ratchet	1114	7/32"x7/32" opng	DSG-8	8" Sq Blade	PL-208	8" Lineman's	TDS-21	21 H. S. Drills
M-1214	7/16" 12 Pt Skt	S-70	Reht Spinner	1115	1 5/64"x1 5/64" opng	DS-12	12" Sq Blade	PL-1515	8" Lock Ring	GS-4	Feeler Gauge
M-1216	1 1/2" 12 Pt Skt	S-102P	2 1/4" Ext'n	1116	1/4"x1/4" opng	DEG-43	3" Electr'n	PL-1519C	5" Superjoint	CMD-1/2	Carbide Drill
3/8" DRIVE		S-110P	5 1/2" Ext'n	1118	9/32"x9/32" opng	PLIERS		PL-1520C	10" Superjoint		
B-52	Ratchet	ST-1216	1/2" 12 Pt Skt	1120	5/16"x5/16" opng	SCREWDRIVERS					

WILLIAMS HEX BIT SOCKET SETS



SET No. WSC-112A

13 Tools
in TB-13 Metal Tool Box
12-1/2" x 5" x 1-1/4"
Total Weight, 5 lbs.

These one-piece, accurately formed hex bit sockets are preferred by many machinists, die and jig men for their great strength and convenient size. Three flex handles provide adequate leverage for their respective sizes.

No.	Description
M-42A	1/4" Dr. Flex Handle
B-40A	3/8" Dr. Flex Handle
S-40A	1/2" Dr. Flex Handle
AM-604	1/8" Hex Bit, 1/4 Dr.
AM-605	5/32" Hex Bit, 1/4 Dr.
AM-606	3/16" Hex Bit, 1/4 Dr.
AM-607	3/32" Hex Bit, 1/4 Dr.
AB-608	1/4" Hex Bit, 3/8 Dr.
AB-610	5/16" Hex Bit, 3/8 Dr.
AS-612	3/8" Hex Bit, 1/2 Dr.
AS-616	1/2" Hex Bit, 1/2 Dr.
AS-618	5/8" Hex Bit, 1/2 Dr.
AS-620	3/4" Hex Bit, 1/2 Dr.



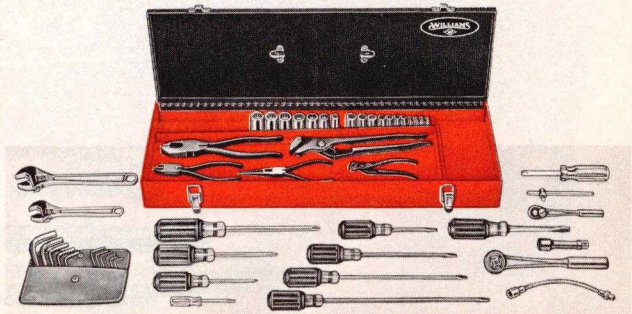
SET No. WSC-112B

13 Tools
in TB-13 Metal Tool Box
12-1/2" x 5" x 1-1/4"
Total Weight, 6.8 lbs.

Removable bits are a decided convenience for those who like the replacement feature and the interchangeability of short or long hex bits. Regular and Phillips bits are available for use with the 5/16" hex bit socket.

No.	Description
M-42A	1/4" Dr. Flex Handle
B-40A	3/8" Dr. Flex Handle
S-40A	1/2" Dr. Flex Handle
MA-4	1/8" Hex Bit, 1/4 Dr.
MA-5	5/32" Hex Bit, 1/4 Dr.
MA-6	3/16" Hex Bit, 1/4 Dr.
MA-7	3/32" Hex Bit, 1/4 Dr.
BA-8	1/4" Hex Bit, 3/8 Dr.
BA-10	5/16" Hex Bit, 3/8 Dr.
SA-12	3/8" Hex Bit, 1/2 Dr.
SA-16	1/2" Hex Bit, 1/2 Dr.
SA-18	5/8" Hex Bit, 1/2 Dr.
SA-20	3/4" Hex Bit, 1/2 Dr.

WILLIAMS ELECTRICIANS' SERVICE SET



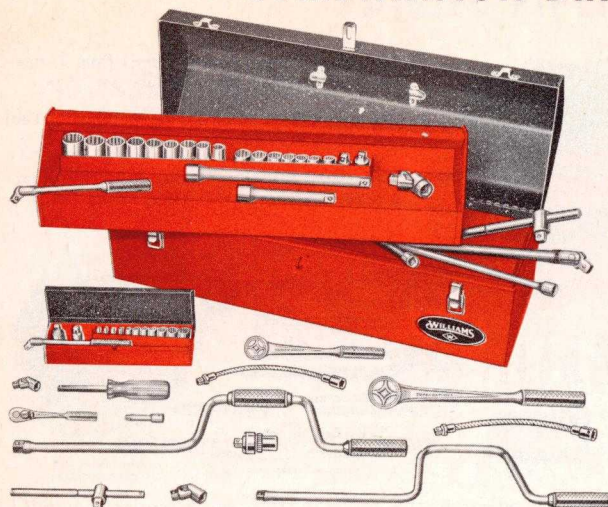
SET No. WSC-1B

54 Tools in TB-7 Metal Tool Box 23" x 7-3/4" x 2-1/4"
Total Weight, 14.9 lbs.

For the maintenance and repair of small and medium size electric motors and other electrical apparatus.

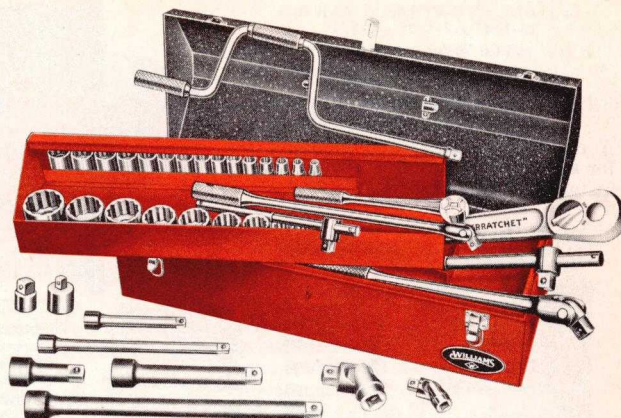
One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		SCREWDRIVERS	
M-20A	Sliding Tee	B-52	Ratchet	DSG-4	4" Sq. Blade
M-51	Ratchet	B-70	Reht Spinner	DEG-43	3" Electr'n
M-106	Spinner Hdl	B-108	3" Ext'n	DEG-46	6" Electr'n
M-604	1/8" 6 Pt Skt	B-1212	3/8" 12 Pt Skt	DEG-48	8" Electr'n
M-605	5/32" 6 Pt Skt	B-1214	7/16" 12 Pt Skt	DEG-50	10" Electr'n
M-606	3/16" 6 Pt Skt	B-1216	1/2" 12 Pt Skt	DE-52	2" Pocket
M-607	3/32" 6 Pt Skt	B-1218	9/16" 12 Pt Skt	DPG-1	Phillips No. 1
M-608	1/4" 6 Pt Skt	B-1220	5/8" 12 Pt Skt	DPG-2	Phillips No. 2
M-609	5/32" 6 Pt Skt	B-1222	1 1/16" 12 Pt Skt	DPG-3	Phillips No. 3
M-1210	5/16" 12 Pt Skt	B-1224	3/4" 12 Pt Skt	PLIERS	
M-1211	1 1/32" 12 Pt Skt	WRENCHES		PL-46C	6" Diag Cut
M-1212	3/8" 12 Pt Skt	AP-6	6" Adjustable	PL-76C	6" Chn Nose
M-1214	7/16" 12 Pt Skt	AP-8	8" Adjustable	PL-208	8" Lineman's
M-1216	1 1/2" 12 Pt Skt	WS-44A	13 Hex Wrs	PL-1519C	5" Superjoint
MFE-6	Flex Extension			PL-1520C	10" Superjoint

COMBINATION DRIVE SUPERSOCKET® SETS



SET No. WSC-11A

53 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 30.3 lbs.



SET No. WSC-10C

41 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 53.7 lbs.

SET No. WSC-10CT

41 Tools Only

Total Weight, 39.1 lbs.

An excellent basic set of $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " drive sockets and drivers with adapters for adapting up or down in the various drives. A comprehensive start for the maintenance mechanic.

Millwrights and mechanics working on medium and heavy sized equipment will find the drive power of this $\frac{1}{2}$ " and $\frac{3}{4}$ " square drive socket set just right for their kind of work.

One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE	
M-42A	Flex Handle	B-15	Speeder	S-15A	Speeder
M-51	Ratchet	B-20A	Sliding Tee	S-20A	Sliding Tee
M-102	2" Ext'n	B-40A	Flex Handle	S-41A	Flex Handle
M-106	Spinner Hdle	B-52	Ratchet	S-52	Ratchet
MB-130	1 1/4" x 3/8" Adapter	B-55	Ratchet Adapt	S-110P	5 1/2" Ext'n
MB-131	3/8" x 1/2" Adapter	B-110	5 1/2" Ext'n	S-115P	10 1/2" Ext'n
MFE-6	Flex Extension	B-115	10 1/2" Ext'n	S-140A	Universal Jt
M-140A	Universal Jt	BS-130	3/8" x 1/2" Adapter	ST-1216	1 1/2" 12 Pt Skt
M-604	1 1/2" 6 Pt Skt	BS-131	1/2" x 3/8" Adapter	ST-1218	9/16" 12 Pt Skt
M-605	5/32" 6 Pt Skt	BFE-8	Flex Extension	ST-1220	5/8" 12 Pt Skt
M-606	3/16" 6 Pt Skt	B-140A	Universal Jt	ST-1222	1 1/16" 12 Pt Skt
M-607	7/32" 6 Pt Skt	B-1212	3/8" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt
M-608	1/4" 6 Pt Skt	B-1214	7/16" 12 Pt Skt	ST-1226	13/16" 12 Pt Skt
M-609	5/16" 6 Pt Skt	B-1216	1/2" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt
M-1210	3/8" 12 Pt Skt	B-1218	9/16" 12 Pt Skt	ST-1230	15/16" 12 Pt Skt
M-1211	1 1/32" 12 Pt Skt	B-1220	5/8" 12 Pt Skt	ST-1232	1" 12 Pt Skt
M-1212	3/8" 12 Pt Skt	B-1222	1 1/16" 12 Pt Skt		
M-1214	7/16" 12 Pt Skt	B-1224	3/4" 12 Pt Skt		
M-1216	1 1/2" 12 Pt Skt			TB-1A	Tool Box

One Ea.	Description	One Ea.	Description	One Ea.	Description
1/2" DRIVE		1/2" DRIVE		3/4" DRIVE	
S-15A	Speeder	ST-1221	2½ ³² " 12 Pt Skt	H-51	Ratchet
S-20A	Sliding Tee	ST-1222	1½ ¹⁶ " 12 Pt Skt	H-104	4" Ext'n
S-41A	Flex Handle	ST-1224	3¼ ⁸ " 12 Pt Skt	H-110	8" Ext'n
S-52	Ratchet	ST-1225	2½ ³² " 12 Pt Skt	H-115	15½ ³² " Ext'n
S-110P	5½ ³² " Ext'n	ST-1226	1¾ ⁸ " 12 Pt Skt	H-140A	Universal Jt
S-115P	10½ ³² " Ext'n	ST-1228	3½ ⁸ " 12 Pt Skt	H-1234	1½ ¹⁶ " 12 Pt Skt
S-140A	Universal Jt	ST-1230	1½ ¹⁶ " 12 Pt Skt	H-1236	1½ ⁸ " 12 Pt Skt
SH-130	½ ⁸ " x ¾ ⁸ " Adapter	ST-1231	3½ ³² " 12 Pt Skt	H-1238	1¾ ¹⁶ " 12 Pt Skt
SH-31	¾ ⁸ " x 1½ ⁸ " Adapter	ST-1232	1" 12 Pt Skt	H-1240	1½ ⁸ " 12 Pt Skt
ST-1212	3 ³² " 12 Pt Skt	.....	.....	H-1242	1½ ¹⁶ " 12 Pt Skt
ST-1214	7 ¹⁶ " 12 Pt Skt	3/4" DRIVE		H-1244	1¾ ⁸ " 12 Pt Skt
ST-1216	½ ⁸ " 12 Pt Skt			H-1246	1¾ ¹⁶ " 12 Pt Skt
ST-1218	9 ¹⁶ " 12 Pt Skt			H-1248	1½ ² " 12 Pt Skt
ST-1219	19 ³² " 12 Pt Skt	H-20A	Sliding Tee	H-1250	1¾ ⁸ " 12 Pt Skt
ST-1220	9 ³² " 12 Pt Skt	H-41A	Flex Handle	H-1252	1½ ⁸ " 12 Pt Skt

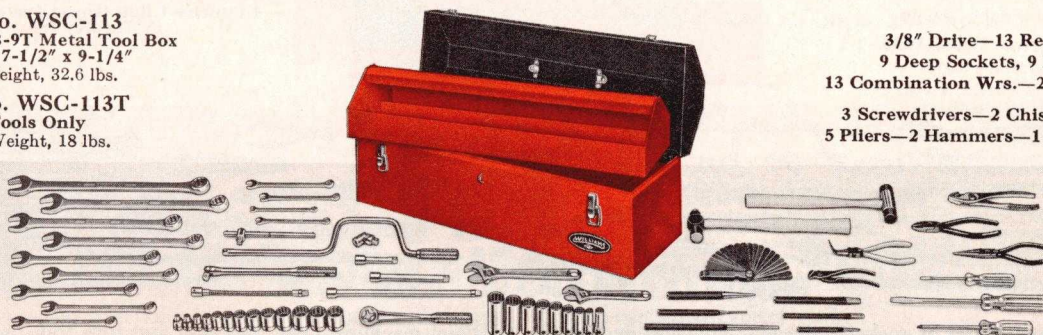
WILLIAMS
INDUSTRIAL MECHANIC and LIGHT MACHINE REPAIR SET

SET No. WSC-113

63 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 32.6 lbs.

SET No. WSC-113T

63 Tools Only
Total Weight, 18 lbs.



3/8" Drive—13 Reg. Sockets,
9 Deep Sockets, 9 Drive Parts
13 Combination Wrs.—2 Adjustable Wrs.

**3 Screwdrivers—2 Chisels—4 Punches
5 Pliers—2 Hammers—1 Feeler Gauge Set**

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		3/8" DRIVE		3/8" DRIVE		COMBINATION WRS.		SCREWDRIVERS		PLIERS	
B-1208	1/4" 12 Pt Skt	BD-1212	3/8" Deep Skt	B-52	Ratchet	1164	5/8" x 5/8" opng	DE-43	3" Elect'rns	PL-6	6" Slip Jt
B-1210	5/16" 12 Pt Skt	BD-1214	7/16" Deep Skt	B-108	3" Ext'n	1165	1 1/16" x 1 1/16" opng	DP-2	Phillips No. 2	PL-46	6" Diag Cut
B-1212	3/8" 12 Pt Skt	BD-1216	1/2" Deep Skt	B-110	5 1/2" Ext'n	1166	3/4" x 3/4" opng	DR-26	6" Rd Blade	PL-76	6" Chain Nose
B-1214	1/2" 12 Pt Skt	BD-1218	9/16" Deep Skt	B-115	10 1/2" Ext'n	1167A	1 3/16" x 1 3/16" opng	CHISELS & PUNCHES		PL-126C	6" Needle
B-1216	1/2" 12 Pt Skt	BD-1220	5/8" Deep Skt	B-140A	Universal Jt	1167	7/8" x 7/8" opng			PL-1519	5" Superjoint
B-1218	5/8" 12 Pt Skt	BD-1222	1 1/16" Deep Skt	COMBINATION WRS.		1168	1 1/8" x 1 5/16" opng	C-12	3/8" Cold	MISC. TOOLS	
B-1220	5/8" 12 Pt Skt	BD-1224	3/4" Deep Skt			1170	1" x 1" opng	C-16	1/2" Cold		
B-1222	1 1/16" 12 Pt Skt	BD-1226	1 3/16" Deep Skt	1158	1 1/4" x 1 1/4" opng	ADJUSTABLE WRS.		P-4	1/8" Pin	GS-1	Feeler Gauge
B-1224	3/4" 12 Pt Skt	BD-1228	7/8" Deep Skt	1159	3/4" x 1 1/4" opng			P-13	3/32" Solid	HBP-3-0	8 oz. Hammer
B-1226	7/8" 12 Pt Skt	BFE-8	Flexible Ext'n	1160	3/8" x 3/8" opng	AP-6	6" Adj Wr	P-25	5/32" Taper	HSF-105	Hammer Body
B-1228	1 1/8" 12 Pt Skt	B-15	Speeder	1161	1/2" x 7/16" opng	AP-8	8" Adj Wr	P-39	Center	HSF-10H	Hard Tip
B-1230	1 9/16" 12 Pt Skt	B-20A	Sliding Tee	1162	1 1/2" x 1 1/2" opng	.....	.....	.....	.....	HSF-10S	Soft Tip
B-1232	1" 12 Pt Skt	B-40A	Flex Handle	1163	3/4" x 3/4" opng	.....	.....	.....	.....



PIPEFITTERS' SERVICE and LIGHT REPAIR SET

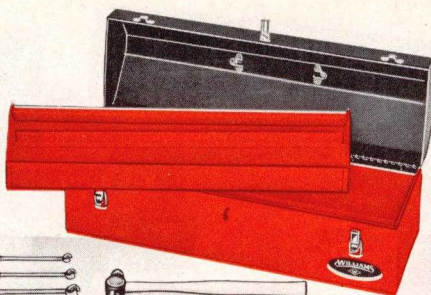
SET No. WSC-3

74 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 45.1 lbs.

SET No. WSC-3T

74 Tools Only
Total Weight, 30.5 lbs.

A carefully selected and compact set for small and medium pipe and tubing installation and maintenance.



1 Adjustable Wr—1 Chain Wr—1 Pipe Tongs
8 Combination Wrs—9 Flare Nut Wrs

13 Hex Key Wrs—1 Tube Cutter—1 Flaring Tool
6 Screwdrivers—3 Pliers

5 Chisels—2 Punches—1 Ball Pein Hammer
6 Screw Extractors—15 High Speed Drills



This is a selection of tools designed for small and medium size pipe and tubing work encountered in plant installation and maintenance work.

Pipe service on water coolers, unit heaters, air conditioning units, small steam traps, etc., can be quickly and efficiently

accomplished with the tools in this set. Compact enough for easy transportation yet comprehensive enough in its range to be sure of having the right tool on the job.

Generous size hip-roof tool case has tote tray and adequate space for other favorite tools.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
CHAIN & ADJUSTABLE WRENCHES		SHORT COMBINATION WRENCHES		PUNCHES		SCREW EXTRACTORS	
CT-1	20" Pipe Tong	XOEE-610	5/16"x9 1/2" opng	P-8	1/4" Pin	EX-4	For 1/8" pipe
CW-4	11" Chain Wr	XOEE-1212	3/8"x5 1/2" opng	P-42	Center	EX-5	For 1/4" pipe
AP-6	6" Adj Wr	XOEE-1214	3/16"x7 1/2" opng	PLIERS		EX-6	For 3/8" pipe
AP-10	10" Adj Wr	XOEE-1216	1/2"x1 1/2" opng	PL-370	7" Slip Jt	EX-7	For 1/2" pipe
FLARE NUT WRENCHES		XOEE-1218	9/16"x9 1/2" opng	PL-1520	10" Superjoint	EX-8	For 3/4" pipe
1312	3/8"x3/8" opng	XOEE-1220	5/8"x5 1/2" opng	PL-1522C	14" Superjoint	EX-9	For 1" pipe
1314	7/16"x7/16" opng	XOEE-1222	1 1/16"x1 1/2" opng	CUSHION GRIP SCREWDRIVERS		MISCELLANEOUS TOOLS	
1316	1/2"x1/2" opng	XOEE-1224	3/4"x3/4" opng	DSG-4	4" Sq Blade	HBP-2-0	3/4 lb. Hammer
1318	9/16"x9/16" opng	CHISELS		DSG-6	6" Sq Blade	WS-44A	13 Hex Wrs
1320	5/8"x5/8" opng	C-10	1/4" Cold	DSG-8	8" Sq Blade	TDS-15	15 Drills 1/16"-1/2"
1322	1 1/16"x1 1/16" opng	C-20	5/8" Cold	DPG-1	Phillips No. 1	TT-161	Tube Cutter
1324	3/4"x3/4" opng	C-32	1" Cold	DPG-2	Phillips No. 2	TT-162	Flaring Tool
1328	7/8"x7/8" opng	C-40	3/4" Cape	DPG-3	Phillips No. 3	.....	.....
1332	1"x1" opng	C-72	1/4" Rd Nose			.....	.....

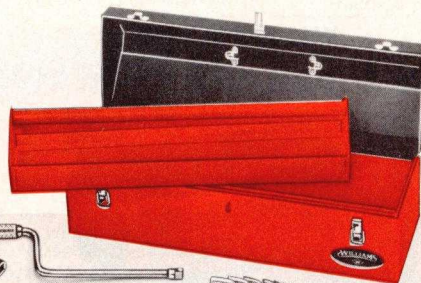
WILLIAMS DIESEL MACHINIST'S TOOL SET

SET No. WSC-103

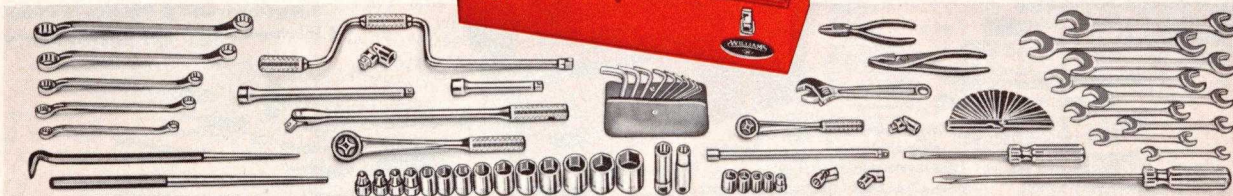
67 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 39.6 lbs.

SET No. WSC-103T

67 Tools Only
Total Weight, 25 lbs.



3/8" Drive—3 Drive Parts, 7 Sockets
1/2" Drive—6 Drive Parts, 16 Sockets
15 Wrenches—2 Pliers—2 Screwdrivers
1 Punch—1 Roll Bar—1 Feeler Gauge
13 Hex Key Wrs



The sizes and types of sockets, drivers, wrenches and other tools contained in this set more than fill the basic needs of the

diesel machinist. Hip-roof case and tote tray provide adequate room for additional tools and equipment items.

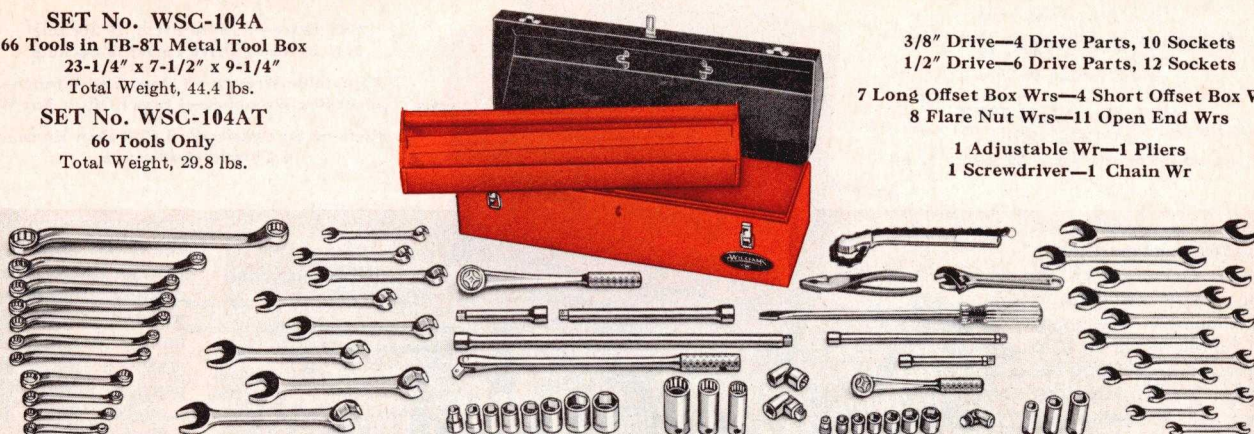
One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		BOX WRENCHES		END WRENCHES		SCREWDRIVERS	
B-52	Ratchet	S-52	Ratchet	ST-622	1 1/16" 6 Pt Skt	8725B	1 1/2"x9 1/2" opng	1029B	1 1/16"x3 3/4" opng	DR-26	8" Rd Blade
B-115	10 1/2" Ext'n	S-15A	Speeder	ST-624	3/4" 6 Pt Skt	8727	9/16"x5 1/2" opng	1731A	3/4"x7 1/2" opng	DR-32	12" Rd Blade
B-140A	Universal Jt	S-41A	Flex Handle	ST-626	1 3/16" 6 Pt Skt	8727A	5/8"x1 1/2" opng	1033A	3/4"x1 1/2" opng	.....	.....
B-612	3/8" 6 Pt Skt	S-110P	5 1/2" Ext'n	ST-628	7/8" 6 Pt Skt	8731A	3/4"x7 1/2" opng	1733	7/8"x1" opng	.....	.....
B-614	7/16" 6 Pt Skt	S-115P	10 1/2" Ext'n	ST-630	1 5/16" 6 Pt Skt	8033A	7/8"x1 1/2" opng	1033C	1 5/16"x1" opng	MISC. TOOLS	
B-616	1/2" 6 Pt Skt	S-140A	Universal Jt	ST-632	1" 6 Pt Skt	END WRENCHES		PLIERS		WS-44A	13 Hex Wrs
B-618	9/16" 6 Pt Skt	ST-612	3/8" 6 Pt Skt	ST-634	1 1/16" 6 Pt Skt	1725	3/16"x1 1/2" opng	PL-46	6" Diag Cut	P-29	Taper Punch
B-620	5/8" 6 Pt Skt	ST-614	7/16" 6 Pt Skt	ST-636	1 1/8" 6 Pt Skt	1725B	1/2"x9 1/2" opng	PL-370	7" Slip Jt	C-715	15" Roll Bar
BU-1216	1 1/2" 12 Pt Uni	ST-616	1 1/2" 6 Pt Skt	ST-1238	1 1/2" 12 Pt Skt	1727	9/16"x5 1/2" opng	.....	.....	GS-1	Feeler Gauge
BU-1218	9/16" 12 Pt Uni	ST-618	9/16" 6 Pt Skt	SD-1218	9/16" 12 Pt Dp	1027B	5/8"x1 1/2" opng	.....	.....	AP-8	8" Adj. Wrench
.....	.....	ST-620	5/8" 6 Pt Skt	SD-1224	3/4" 12 Pt Dp						



DIESEL PIPEFITTERS' TOOL SET

SET No. WSC-104A
66 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 44.4 lbs.

SET No. WSC-104AT
66 Tools Only
Total Weight, 29.8 lbs.



3/8" Drive—4 Drive Parts, 10 Sockets
1/2" Drive—6 Drive Parts, 12 Sockets
7 Long Offset Box Wrs—4 Short Offset Box Wrs
8 Flare Nut Wrs—11 Open End Wrs
1 Adjustable Wr—1 Pliers
1 Screwdriver—1 Chain Wr

The bulk of Diesel repair and maintenance work encountered by the pipefitter can be efficiently accomplished with this specially designed set. The size ranges and types of sockets and wrenches in this set make it easy for the Diesel pipe-fitter to

select exactly the right tool that will do the job fast and safely.

Hip-roof case and tote-tray provide adequate space for additional tool and equipment items. Sturdy construction, strong handle, latches, hasp and staple assure long trouble-free service.

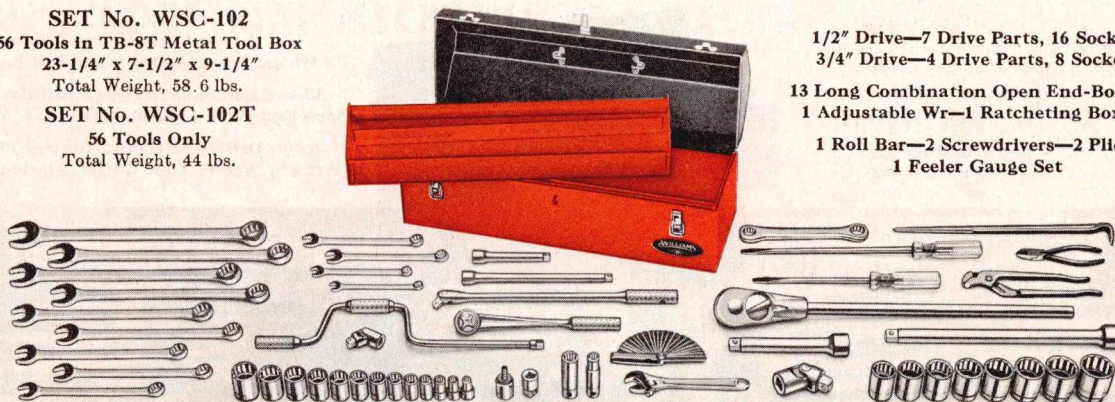
One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		BOX WRENCHES		END WRENCHES		ADJUSTABLE WR	
B-52	Ratchet	S-41A	Flex Handle	SD-1224	3/4" 12 Pt Dp	9723	3/8"x7/16" opng	1723	3/8"x7/16" opng	AP-8	8" Adjustable
B-110	5 1/2" Ext'n	S-52	Ratchet	SD-1228	1 1/2" 12 Pt Dp	9725	3/8"x1 1/2" opng	1725	3/8"x1 1/2" opng	CHAIN WRENCH	
B-115	10 1/2" Ext'n	S-110P	5 1/2" Ext'n	SD-1236	1 1/2" 12 Pt Dp	9725B	1 1/2"x3/16" opng	1725B	1 1/2"x3/16" opng	CW-4	
B-140A	Universal Jt	S-115P	10 1/2" Ext'n	SU-1224	3/4" 12 Univ	9729	5/8"x3/4" opng	1727	9/16"x5/8" opng	PLIERS	
B-612	3/8" 6 Pt Skt	S-121P	20" Ext'n	BOX WRENCHES		FLARE NUT WRS		1027B	5/8"x1 1/16" opng	SCREWDRIVER	
B-614	3/8" 6 Pt Skt	S-140A	Universal Jt	8725	3/16"x1 1/2" opng	1318	9/16"x9/16" opng	1729	5/8"x3/4" opng	DR-32	12" Rd Blade
B-616	1 1/2" 6 Pt Skt	ST-616	1 1/2" 6 Pt Skt	8725B	1 1/2"x9/16" opng	1320	5/8"x3/8" opng	1029B	1 1/16"x3/4" opng	DR-32	
B-618	9/16" 6 Pt Skt	ST-618	9/16" 6 Pt Skt	8727	9/16"x5/8" opng	1322	1 1/16"x1 1/16" opng	1731A	3/4"x3/8" opng	DR-32	
B-620	5/8" 6 Pt Skt	ST-620	5/8" 6 Pt Skt	8727A	5/8"x1 1/16" opng	1324	3/4"x3/4" opng	1031B	2 5/32"x1 1/16" opng	DR-32	
B-622	1 1/16" 6 Pt Skt	ST-622	1 1/16" 6 Pt Skt	8729	5/8"x3/4" opng	1328	7/8"x5/8" opng	1033A	7/8"x1 1/16" opng	DR-32	
B-624	3/4" 6 Pt Skt	ST-624	3/4" 6 Pt Skt	8731A	3/4"x1 7/8" opng	1332	1"x1" opng	1036B	1 1/16"x1 1/8" opng	DR-32	
BD-616	1 1/2" 6 Pt Dp	ST-628	7/8" 6 Pt Skt	8037	1 1/16"x1 1/4" opng	1334	1 1/16"x1 1/16" opng	.....	.....	DR-32	
BD-620	5/8" 6 Pt Dp	ST-634	1 1/16" 6 Pt Skt	.....	.....	1336	1 1/8"x1 1/8" opng	.....	.....	DR-32	
BD-624	3/4" 6 Pt Dp	ST-636	1 1/8" 6 Pt Skt	.....	.....	.....	.....	.....	.....	DR-32	

WILLIAMS

DIESEL MACHINIST'S TOOL SET

SET No. WSC-102
56 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 58.6 lbs.

SET No. WSC-102T
56 Tools Only
Total Weight, 44 lbs.



1/2" Drive—7 Drive Parts, 16 Sockets
3/4" Drive—4 Drive Parts, 8 Sockets

13 Long Combination Open End-Box Wrs
1 Adjustable Wr—1 Ratcheting Box Wr

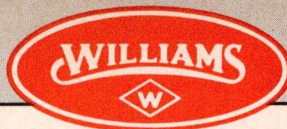
1 Roll Bar—2 Screwdrivers—2 Pliers
1 Feeler Gauge Set

This is an excellent selection of 1/2" and 3/4" drive sockets and drivers, combination wrenches and other tools that provide the Diesel machinist with a basic tool set that will cover a wide range

of his particular type of work.

Hip-roof case and tote-tray provide space for additional tool and equipment items that may be added from time to time.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/2" DRIVE		1/2" DRIVE		3/4" DRIVE		COMBINATION WRS		ADJUSTABLE WR	
S-15A	Speeder	ST-1218	9/16" 12 Pt Skt	H-51A2	Ratchet	1161	7/16"x7/16" opng	AP-8	8" Adjustable
S-41A	Flex Handle	ST-1220	5/8" 12 Pt Skt	H-110	8" Ext'n	1162	1 1/2"x1 1/2" opng	RATCHET BOX WR	
S-52	Ratchet	ST-1222	1 1/16" 12 Pt Skt	H-115	15 1/2" Ext'n	1163	9/16"x9/16" opng	RB-2428	
S-110P	5 1/2" Ext'n	ST-1224	3/4" 12 Pt Skt	H-140A	Universal Jt	1164	5/8"x5/8" opng	MISC. TOOLS	
S-115P	10 1/2" Ext'n	ST-1226	1 1/16" 12 Pt Skt	H-1236	1 1/2" 12 Pt Skt	1165	1 1/16"x1 1/16" opng	C-715	15" Roll Bar
SH-130	1 1/2"x3/4" Adapter	ST-1228	7/8" 12 Pt Skt	H-1238	1 1/16" 12 Pt Skt	1166	3/4"x3/4" opng	DR-28	8" Screwdriver
S-140A	Universal Jt	ST-1230	1 1/16" 12 Pt Skt	H-1240	1 1/2" 12 Pt Skt	1167A	1 1/16"x1 1/16" opng	DR-32	12" Screwdriver
SA-12	3/8" Hex Bit Skt	ST-1232	1" 12 Pt Skt	H-1242	1 1/16" 12 Pt Skt	1167	7/8"x7/8" opng	GS-1	Feeler Gauge Set
SD-1218	9/16" 12 Pt Dp	ST-1234	1 1/16" 12 Pt Skt	H-1244	1 1/2" 12 Pt Skt	1168	1 1/16"x1 1/16" opng	PL-46	6" Diag Cut Pliers
SD-1224	3/4" 12 Pt Dp	ST-1236	1 1/8" 12 Pt Skt	H-1246	1 1/16" 12 Pt Skt	1170	1"x1" opng	PL-1520	10" Superjoint
ST-1214	7/16" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	H-1248	1 1/2" 12 Pt Skt	1171	1 1/16"x1 1/16" opng	.....	.....
ST-1216	1 1/2" 12 Pt Skt	.....	.....	H-1252	1 1/2" 12 Pt Skt	1172	1 1/8"x1 1/4" opng	.....	.....
.....	.....	.....	.....	.....	.....	1173	1 1/4"x1 1/4" opng	.....	.....



DIESEL ENGINE MAINTENANCE SET

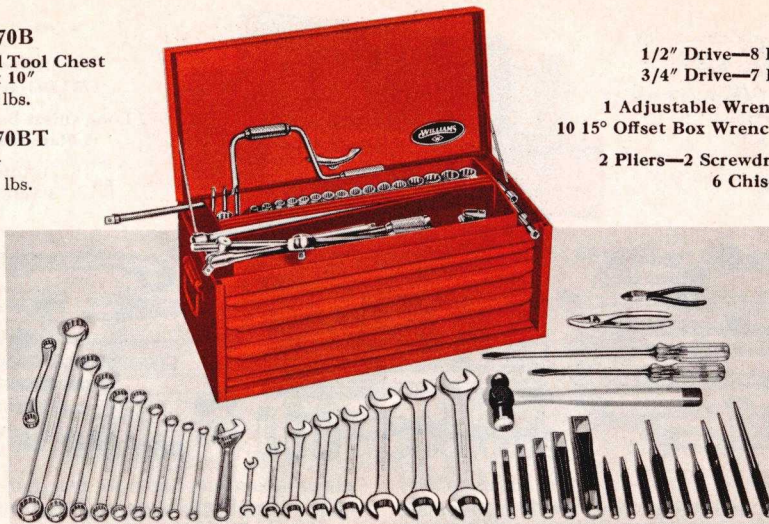
SET No. WSC-70B

85 Tools in TB-1001 Metal Tool Chest
22-5/8" x 10-1/8" x 10"
Total Weight, 98.2 lbs.

SET No. WSC-70BT

85 Tools Only
Total Weight, 62.2 lbs.

This set is specially designed for mechanics doing general service work on diesel engine installations in all types of stationary and mobile units such as power plants, locomotives, ships, trucks, tractors, buses, etc. It contains all the standard tools needed for general diesel engine service work. Ideal for



1/2" Drive—8 Drive Parts, 18 Sockets
3/4" Drive—7 Drive Parts, 12 Sockets

1 Adjustable Wrench—8 Open End Wrenches
10 15° Offset Box Wrenches—1 Short Offset Box Wrench

2 Pliers—2 Screwdrivers—1 Ball Pein Hammer
6 Chisels—9 Punches

locomotive service shops. Chest is constructed of heavy gauge steel adequately reinforced and welded. Drawers with handy compartments operate on free acting suspension slides. Has removable "tote" tray. A cylinder lock on the hinged front panel securely locks entire chest.

*Short Double Offset Box

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/2" DRIVE		1/2" DRIVE		3/4" DRIVE		OPEN END WRENCHES		15° BOX WRENCHES		CHISELS	
S-15A	Speeder	ST-1225	25/32" 12 Pt Skt	H-110	8" Ext'n	1723	3/8"x7/16" opng	7731A	3/4"x7/8" opng	C-8	1/4" Cold
S-20A	Sliding Tee	ST-1226	13/16" 12 Pt Skt	H-115	15 1/2" Ext'n	1725B	1/2"x9/16" opng	7033C	13/16"x1" opng	C-12	3/8" Cold
S-41A	Flex Handle	ST-1228	7/8" 12 Pt Skt	H-140A	Universal Jt	1729	5/8"x3/4" opng	7735A	1 1/16"x1 1/8" opng	C-16	1/2" Cold
S-52	Ratchet	ST-1230	15/16" 12 Pt Skt	H-1228	7/8" 12 Pt Skt	1029	1 1/16"x2 5/32" opng	7037	1 1/16"x1 1/4" opng	C-20	5/8" Cold
S-110P	5 1/2" Ext'n	ST-1231	3 1/32" 12 Pt Skt	H-1230	15/16" 12 Pt Skt	1731A	3/4"x7/8" opng	*9729	5/8"x3/4" opng	C-24	3/4" Cold
S-115P	10 1/2" Ext'n	ST-1232	1" 12 Pt Skt	H-1232	1" 12 Pt Skt	1033C	15/16"x1" opng			C-36	1 1/8" Cold
S-140A	Universal Jt	ST-1234	1 1/16" 12 Pt Skt	H-1234	1 1/16" 12 Pt Skt	1036B	1 1/16"x1 1/8" opng	PUNCHES		PLIERS	
SH-130	Adapter	ST-1236	1 1/8" 12 Pt Skt	H-1236	1 1/8" 12 Pt Skt	1737	1 1/8"x1 1/4" opng	P-4	1/8" Pin	PL-46	6" Diag Cut
ST-1212	3/8" 12 Pt Skt	ST-1238	1 1/16" 12 Pt Skt	H-1238	1 1/16" 12 Pt Skt			P-6	9/16" Pin	PL-370	7" Slip Jt
ST-1214	7/16" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	H-1240	1 1/4" 12 Pt Skt	15° BOX WRENCHES		P-8	1/4" Pin	MISC. TOOLS	
ST-1216	1/2" 12 Pt Skt			H-1242	1 1/2" 12 Pt Skt	7723	3/8"x7/16" opng	P-13	3/32" Solid	HBP-2	1 1/2 lb. Hammer
ST-1218	9/16" 12 Pt Skt			H-1244	1 3/8" 12 Pt Skt	7725	7/16"x1/2" opng	P-14	1/2" Solid	AP-8	8" Adj Wr
ST-1219	1 1/32" 12 Pt Skt			H-1246	1 7/16" 12 Pt Skt	7725B	1/2"x9/16" opng	P-25	3/32" Taper	DR-28	8" Screwdr
ST-1220	5/8" 12 Pt Skt	H-20A	Sliding Tee	H-1248	1 1/2" 12 Pt Skt	7727	9/16"x5/8" opng	P-26	3/16" Taper	DR-32	12" Screwdr
ST-1222	1 1/16" 12 Pt Skt	H-41A	Flex Handle	H-1252	1 5/8" 12 Pt Skt	7729	5/8"x3/4" opng	P-30	Prick		
ST-1224	3/4" 12 Pt Skt	H-104	4" Ext'n			7029B	1 1/16"x3/4" opng	P-40	Center		

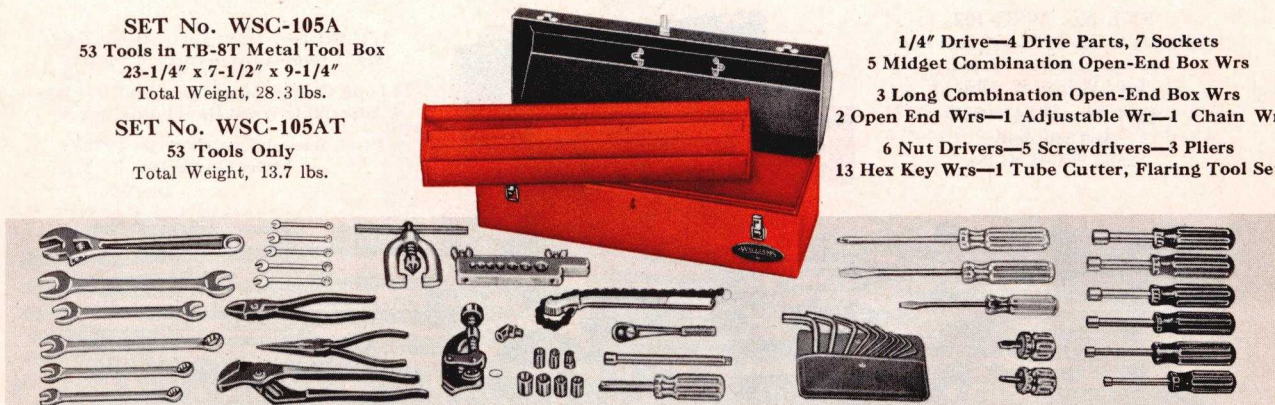
WILLIAMS DIESEL EMERGENCY REPAIR SET

SET No. WSC-105A

53 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 28.3 lbs.

SET No. WSC-105AT

53 Tools Only
Total Weight, 13.7 lbs.



1/4" Drive—4 Drive Parts, 7 Sockets
5 Midget Combination Open-End Box Wrs

3 Long Combination Open-End Box Wrs
2 Open End Wrs—1 Adjustable Wr—1 Chain Wr

6 Nut Drivers—5 Screwdrivers—3 Pliers
13 Hex Key Wrs—1 Tube Cutter, Flaring Tool Set

This set contains a range of tools carefully selected to meet the needs of Diesel trouble-shooting work. When breakdowns occur, this one set equips the Diesel mechanic to make emergency repairs

and adjustments that will get the Diesel back in operation in the shortest time possible. Hip-roof case provides plenty of space for additional tool and equipment items.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		ELECTRONIC WRS		NUT DRIVERS		PLIERS	
M-51	Ratchet	XOEE-608	1/4"x1/4" opng	ND-8	1/4" Hex opng	PL-47	7" Diagonal Cut
M-106	Spinner Handle	XOEE-609	9/32"x9/32" opng	ND-10	5/16" Hex opng	PL-77	7" Chain Nose
M-115	6" Extension	XOEE-610	5/16"x5/16" opng	ND-12	3/8" Hex opng	PL-1520	10" Superjoint
M-140A	Universal Joint	XOEE-611	1 1/32"x1 1/32" opng	ND-14	7/16" Hex opng	MISC. TOOLS	
M-608	1 1/4" 6 Pt Socket	XOEE-1212	3/8"x3/8" opng	ND-16	1/2" Hex opng	WS-44A	13 Hex Key Wrs
M-609	9/32" 6 Pt Socket			ND-18	5/16" Hex opng	TT-165	Tubing Set
M-610	5/16" 6 Pt Socket	WRENCHES		SCREWDRIVERS		CW-4	Chain Wrench
M-611	1 1/32" 6 Pt Socket	1161	7/16"x7/16" opng	DR-24	4" Round Blade		
M-612	3/8" 6 Pt Socket	1162	1/2"x1/2" opng	DR-26	6" Round Blade		
M-614	7/16" 6 Pt Socket	1163	9/16"x9/16" opng	DS-62	Stubby		
M-616	1/2" 6 Pt Socket	1027B	5/8"x1 1/16" opngs	DP-3	No. 3 Phillips		
		1731	3/4"x1 1/16" opngs	DP-62	No. 2 Phillips		
		AP-10	10" Adjustable				

SUPERCHEST SET No. WSC-1001C

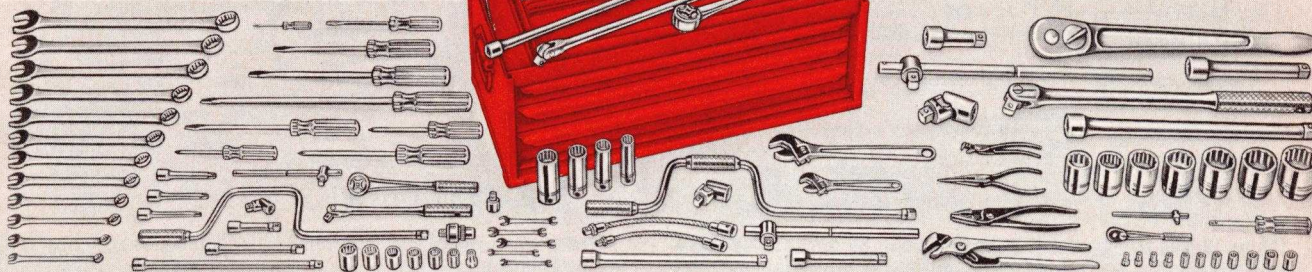
SET No. WSC-1001C
109 Tools in TB-1001 Metal Tool Chest
22-5/8" x 10-1/8" x 10"
Total Weight. 95.5 lbs.

SET No. WSC-1001CT
109 Tools Only
Total Weight, 59.5 lbs.



1/4" Drive—11 Sockets—4 Drivers
3/8" Drive—7 Sockets—14 Drive Parts
1/2" Drive—19 Sockets—8 Drive Parts

3/4" Drive—7 Sockets—7 Drive Parts
5 Midget Open End Wrs—12 Combination Wrs
2 Adjustable Wrs—4 Pliers—9 Screwdrivers



This set packs a remarkable amount of "toolpower" for its size. Hex and 12-point sockets range from 1/8" thru 1 5/8" opening sizes.

An assortment of 33 driver attachments in $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " drives assure a considerable variety of tool assemblies.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		ELECTRONIC WRS		ADJUSTABLE WRS	
M-604	3/8" 6 Pt Skt	B-1220	3/8" 12 Pt Skt	ST-1216	1/2" 12 Pt Skt	S-110P	5 1/2" Ext'n	1106	13 1/4" x 3/32" opng	APL-6	6" Lockajust
M-605	3/32" 6 Pt Skt	B-1222	1/16" 12 Pt Skt	ST-1218	1/16" 12 Pt Skt	S-115P	10 1/2" Ext'n	1107	13 1/4" x 1/8" opng	APL-10	10" Lockajust
M-606	3/16" 6 Pt Skt	B-1224	3/8" 12 Pt Skt	ST-1219	1/32" 12 Pt Skt	S-121P	20" Ext'n	1108	9 3/4" x 1/32" opng		
M-607	7/32" 6 Pt Skt	B-15	Speeder	ST-1220	1/2" 12 Pt Skt	S-140A	Universal Jt	1108A	1 1/2" x 9/16" opng		
M-608	3/4" 6 Pt Skt	B-20A	Sliding Tee	ST-1221	2 1/32" 12 Pt Skt			1109	3/16" x 3/8" opng		
M-609	9/32" 6 Pt Skt	B-40A	Flex Handle	ST-1222	1 1/16" 12 Pt Skt						
M-1210	1/16" 12 Pt Skt	B-52	Ratchet	ST-1224	3/4" 12 Pt Skt	3/4" DRIVE				PL-76	6" Chn Nose
M-1211	1/32" 12 Pt Skt	B-55	Ratchet Adapt	ST-1225	3/32" 12 Pt Skt	H-1234	1 1/16" 12 Pt Skt			PL-370	7 Slip Jt
M-1212	3/8" 12 Pt Skt	B-108	3" Ext'n	ST-1226	3 1/16" 12 Pt Skt	H-1236	1 3/8" 12 Pt Skt	COMBINATION WRS		PL-1519	5" Superjoint
M-1214	3/16" 12 Pt Skt	B-110	5 1/2" Ext'n	ST-1228	1 1/2" 12 Pt Skt	H-1240	1 1/4" 12 Pt Skt	1159	5/16" x 5/16" opng	PL-1520	10" Superjoint
M-1216	3/16" 12 Pt Skt	B-115	10 1/2" Ext'n	ST-1230	2 1/2" 12 Pt Skt	H-1242	1 1/2" 12 Pt Skt	1160	3/8" x 3/8" opng		
M-20A	Sliding Tee	B-140A	Universal Jt	ST-1231	3 1/32" 12 Pt Skt	H-1246	1 1/2" 12 Pt Skt	1161	1 1/16" x 5/16" opng		
M-51	Ratchet	BP-2	Phillips No. 2	ST-1232	1 1/2" 12 Pt Skt	H-1248	1 1/2" 12 Pt Skt	1162	3/8" x 3/8" opng	SCREWDRIVERS	
M-106	Spinner Hdle	BP-3	Phillips No. 3	SD-1222	1 1/16" 12 Pt Dp.	H-1252	1 1/2" 12 Pt Skt	1164	5/8" x 1 1/8" opng	DS-4	4" Sq Blade
MFE-6	Flex Extension	BP-4	Phillips No. 4	SD-1226	1 3/16" 12 Pt Dp.	H-20A	Sliding Tee	1165	1 1/16" x 1 1/16" opng	DS-6	6" Sq Blade
		BS-130	Adapter	SD-1228	1 7/8" 12 Pt Dp.	H-41A	Flex Handle	1166	3/4" x 3/4" opng	DS-8	8" Sq Blade
		BFE-8	Flex Extension	SD-1232	1 1/2" 12 Pt Dp.	H-51	Ratchet	1167A	1 1/16" x 1 1/16" opng	DS-10	10" Sq Blade
				S-15A	Speeder	H-104	4" Ext'n	1167	7/8" x 7/8" opng	DS-12	12" Sq Blade
				S-20A	Sliding Tee	H-110	8" Ext'n	1168	1 9/16" x 1 9/16" opng	DE-52	2" Pocket
				S-41A	Flex Handle	H-115	15 1/2" Ext'n	1170	1" x 1" opng	DP-1	Phillips No. 1
				S-52	Ratchet	H-140A	Universal Jt			DP-2	Phillips No. 2
										DP-3	Phillips No. 3

WILLIAMS
INDUSTRIAL MECHANIC and MACHINE REPAIR SET

SET No. WSC-5A
79 Tools in TB-9T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 45.2 lbs.

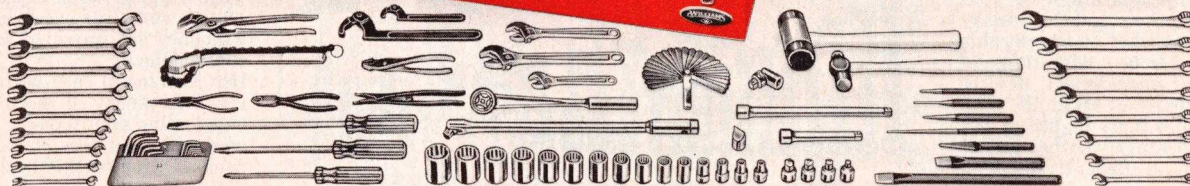
SET No. WSC-5AT
79 Tools Only
Total Weight, 30.6 lbs.



1/2" Drive—5 Drive Parts, 20 Sockets and Bits
3 Adjustable Wrs—13 Hex Key Wrs

**8 Combination Wrs—9 Flare Nut Wrs
2 Spanners—1 Chain Wrench**

**3 Screwdrivers—5 Pliers—3 Chisels—4 Punches
2 Hammers—1 Feeler Gauge Set**



One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/2" DRIVE		1/2" DRIVE		ADJUSTABLE WRS		FLARE NUT WRS		SCREWDRIVERS		PLIERS	
S-41A	Flex Handle	ST-1228	1 1/8" 12 Pt Skt	AP-6	6" Adj Wr	1312	3/8"x3/8" opng	DS-8	8" Sq Blade	PL-6	6" Slip Jt
S-52	Ratchet	ST-1230	1 1/8" 12 Pt Skt	AP-8	8" Adj Wr	1314	7/16"x7/16" opng	DS-12	12" Sq Blade	PL-46	6" Diag Cut
S-110P	5 1/2" Ext'n	ST-1232	1" 12 Pt Skt	AP-10	10" Adj Wr	1316	3/4"x1/2" opng	DP-3	Phillips No. 3	PL-76	6" Chain Nose
S-115P	10 1/2" Ext'n	ST-1234	1 1/8" 12 Pt Skt	COMBINATION WRS		1318	9/16"x9/16" opng	CHISELS & PUNCHES		PL-1515	8" Lock Ring
S-140A	Universal Jt	ST-1236	1 1/8" 12 Pt Skt			1320	5/8"x5/8" opng			PL-1520	10" Superjoint
SB-30	1 1/8" Bit	ST-1238	1 1/8" 12 Pt Skt	1161	7/16"x7/16" opng	1322	1 1/16"x1 1/16" opng	C-24	3/4" Cold	MISC. TOOLS	
ST-1212	3/8" 12 Pt Skt	ST-1240	1 1/4" 12 Pt Skt	1162	1/2"x1/2" opng	1324	3/4"x3/4" opng	C-72	1 1/4" Rd Nose		
ST-1214	7/8" 12 Pt Skt	AS-612	3/4" Hex Bit	1163	9/16"x9/16" opng	1328	5/8"x1/8" opng	C-124	3/4"x12" Cold	HBP-2-0	3/4 lb. Hammer
ST-1216	1 1/8" 12 Pt Skt	AS-616	7/8" Hex Bit	1164	5/8"x5/8" opng	1332	1"x1" opng	P-6	3/16" Pin	HSF-20-H	Hard Tip
ST-1218	5/8" 12 Pt Skt	AS-618	1 1/8" Hex Bit	1165	1 1/16"x1 1/16" opng	SPANNER WRS		P-13	3/32" Solid	HSF-20-S	Soft Tip
ST-1220	5/8" 12 Pt Skt	AS-620	5/8" Hex Bit	1166	3/4"x3/4" opng			P-25	3/32" Taper	HSF-200	Hammer Body
ST-1222	1 1/16" 12 Pt Skt	.....	.....	1167A	1 1/16"x1 1/16" opng	471	3/4"-2" diam	P-40	Center	GS-1	Feeler Gauge
ST-1224	3/4" 12 Pt Skt	.....	.....	1167	7/8"x7/8" opng	474	2"-4 3/4" diam	.....	.....	WS-44A	13 Hex Wrs
ST-1226	1 1/16" 12 Pt Skt	.....	.....	.....	.....	.....	.....	.....	.....	CW-4	Chain Wrench



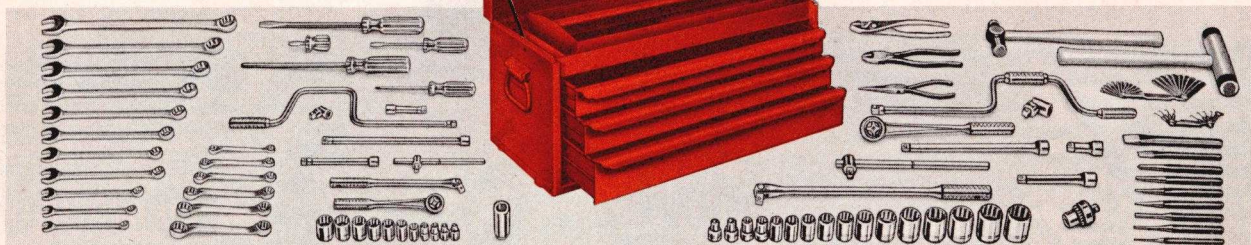
INDUSTRIAL MECHANIC'S BASIC SERVICE SET

SET No. WSC-106

83 Tools in TB-1001 Metal Tool Chest
22-5/8" x 10-1/8" x 10"
Total Weight, 67.6 lbs.

SET No. WSC-106T

83 Tools Only
Total Weight, 31.6 lbs.



Here, in this sturdy chest, is a selection of 83 most needed socket, driver, wrench and other tool items for the industrial mechanic.

These are the tools that cover the most common range of nut-turning problems and other types of work at a moderate investment.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		SHORT OFFSET BOX		SCREWDRIVERS	
B-15	Speeder	S-15A	Speeder	ST-1234	1 1/16" 12 Pt Skt	9723	3/8" x 3/16" opng	DR-24	4" Rd Blade
B-20A	Sliding Tee	S-20A	Sliding Tee	ST-1236	1 1/8" 12 Pt Skt	9725	3/16" x 1/2" opng	DR-28	8" Rd Blade
B-40A	Flex Handle	S-41A	Flex Handle	ST-1238	1 3/16" 12 Pt Skt	9725B	1/2" x 3/16" opng	DS-62	1 1/2" Stubby
B-52	Ratchet	S-52	Ratchet	ST-1240	1 1/4" 12 Pt Skt	9727	3/16" x 3/8" opng	DP-2	Phillips No. 2
B-108	3" Ext'n	S-55A	Ratchet Adapter	ST-1242	1 5/16" 12 Pt Skt	9729	3/8" x 3/4" opng	DP-4	Phillips No. 4
B-110	5 1/2" Ext'n	S-102P	2 1/2" Ext'n			9029C	1 1/16" x 1 1/16" opng		
B-115	10 1/2" Ext'n	S-110P	5 1/2" Ext'n	COMBINATION WRS		PUNCHES		PLIERS	
B-140A	Universal Jt	S-115P	10 1/2" Ext'n	1160	3/8" x 3/8" opng	P-4	1/8" x 6" Pin	PL-8	8" Slip Jt
B-1208	1 1/4" 12 Pt Skt	S-140A	Universal Jt	1161	3/16" x 3/16" opng	P-6	3/16" x 6" Pin	PL-47	7" Diag Cut
B-1210	5/16" 12 Pt Skt	ST-1212	3/8" 12 Pt Skt	1162	1/2" x 1/2" opng	P-10	3/16" x 6" Pin	PL-77	7" Chain Nose
B-1212	3/8" 12 Pt Skt	ST-1214	3/16" 12 Pt Skt	1163	1/16" x 3/16" opng	P-14	1/8" x 6" Solid		
B-1214	1/2" 12 Pt Skt	ST-1216	1/2" 12 Pt Skt	1164	3/8" x 3/8" opng	P-16	3/16" x 6" Solid	MISC. TOOLS	
B-1216	1 1/2" 12 Pt Skt	ST-1218	3/16" 12 Pt Skt	1165	1 1/16" x 1 1/16" opng	P-17	1/4" x 6" Solid	HSF-155	Hammer Body
B-1218	3/16" 12 Pt Skt	ST-1220	3/8" 12 Pt Skt	1166	3/4" x 3/4" opng	P-42	6" Center	HSF-15H	Hard Tip
B-1220	5/8" 12 Pt Skt	ST-1222	1 1/16" 12 Pt Skt	1167A	1 3/16" x 1 3/16" opng			HSF-15S	Soft Tip
B-1222	1 1/16" 12 Pt Skt	ST-1224	3/4" 12 Pt Skt	1167	7/8" x 7/8" opng	CHISELS		HBP-2-0	3/4 lb Hammer
B-1224	3/4" 12 Pt Skt	ST-1226	1 3/16" 12 Pt Skt	1168	1 5/16" x 1 5/16" opng	C-16	1/2" Cold	GS-3	Feeler Gauge Set
B-1226	1 3/16" 12 Pt Skt	ST-1228	7/8" 12 Pt Skt	1170	1" x 1" opng	C-24	3/4" Cold	GS-7	Feeler Gauge Set
B-1228	7/8" 12 Pt Skt	ST-1230	1 1/2" 12 Pt Skt						
BD-626R	1 3/16" Spark Plug Skt	ST-1232	1" 12 Pt Skt						

WILLIAMS GENERAL SERVICE SET

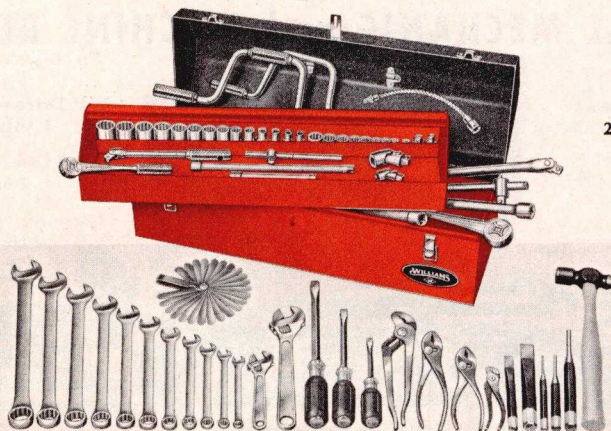
SET No. WSC-101A

67 Tools in TB-8T Metal Tool Box
23-1/4" x 7-1/2" x 9-1/4"
Total Weight, 42.8 lbs.

SET No. WSC-101AT

67 Tools Only
Total Weight, 28.2 lbs.

With its combination of 3/8" and 1/2" drive sockets and the variety of other wrenches and tools, this set is capable of a wide range of service on mechanical devices and machinery of all kinds. All nuts and bolts requiring 1/4" thru 1" openings whether hex or square can be efficiently serviced



3/8" Drive—10 Drive Parts, 9 Sockets
1/2" Drive—7 Drive Parts, 14 Sockets

2 Adjustable—11 Combination Wrenches

4 Pliers—3 Screwdrivers
2 Chisels—3 Punches

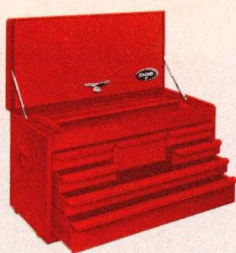
1 Hammer—1 Feeler Gauge Set

with either sockets, box or open-end wrenches. Adjustable wrenches are provided for extra convenience.

Hip roof metal case with "tote" tray has plenty of room for mechanics and maintenance workers who will want to add tools from time to time to this basic set.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		3/8" DRIVE		1/2" DRIVE		COMBINATION WRS		ADJUSTABLE WRS		CHISELS	
B-15	Speeder	B-1216	1 1/2" 12 Pt Skt	ST-1212	3/8" 12 Pt Skt	1160	3/8" x 3/8" opng	APL-6	6" Lockajust	C-16	1/2" Cold
B-20A	Sliding Tee	B-1218	3/16" 12 Pt Skt	ST-1214	3/16" 12 Pt Skt	1161	3/16" x 3/16" opng	APL-8	8" Lockajust	C-24	3/4" Cold
B-40A	Flex Handle	B-1220	5/8" 12 Pt Skt	ST-1216	1/2" 12 Pt Skt	1162	1/2" x 1/2" opng				
B-52	Ratchet	B-1222	1 1/16" 12 Pt Skt	ST-1218	3/16" 12 Pt Skt	1163	3/16" x 3/16" opng	PLIERS		PUNCHES	
B-110	5 1/2" Ext'n	B-1224	3/4" 12 Pt Skt	ST-1220	3/8" 12 Pt Skt	1164	3/8" x 3/8" opng	PL-6	6" Slip Jt	P-4	1/8" Pin
B-115	10 1/2" Ext'n			ST-1222	1 1/16" 12 Pt Skt	1165	1 1/16" x 1 1/16" opng	PL-8	8" Slip Jt	P-6	3/16" Pin
BFE-8	Flex Extension	1/2" DRIVE		ST-1224	3/4" 12 Pt Skt	1166	3/4" x 3/4" opng	PL-1519	5" Superjoint	P-8	1/4" Pin
BS-130	3/8" x 1/2" Adapter	S-15A	Speeder	SD-1226	1 3/16" 12 Pt Deep	1167A	1 3/16" x 1 3/16" opng	PL-1520	10" Superjoint	MISC. TOOLS	
BS-131	1/2" x 3/8" Adapter	S-20A	Sliding Tee	ST-1226	3/16" 12 Pt Skt	1167	3/8" x 3/8" opng	SCREWDRIVERS		HBP-2-0	3/4 lb. Hammer
B-140A	Universal Jt	S-41A	Flex Handle	ST-1228	7/8" 12 Pt Skt	1168	1 5/16" x 1 5/16" opng	DSG-4	4" Cush Grip	GS-1	Feeler Ga. Set
B-1208	1 1/4" 12 Pt Skt	S-52	Ratchet	ST-1230	1 1/2" 12 Pt Skt	1170	1" x 1" opng	DSG-6	6" Cush Grip		
B-1210	5/16" 12 Pt Skt	S-110P	5 1/2" Ext'n	ST-1232	1" 12 Pt Skt			DSG-8	8" Cush Grip		
B-1212	3/8" 12 Pt Skt	S-115P	10 1/2" Ext'n	ST-1234	1 1/16" 12 Pt Skt						
B-1214	1/2" 12 Pt Skt	S-140A	Universal Jt	ST-1236	1 1/8" 12 Pt Skt						

MACHINERY MAINTENANCE SET



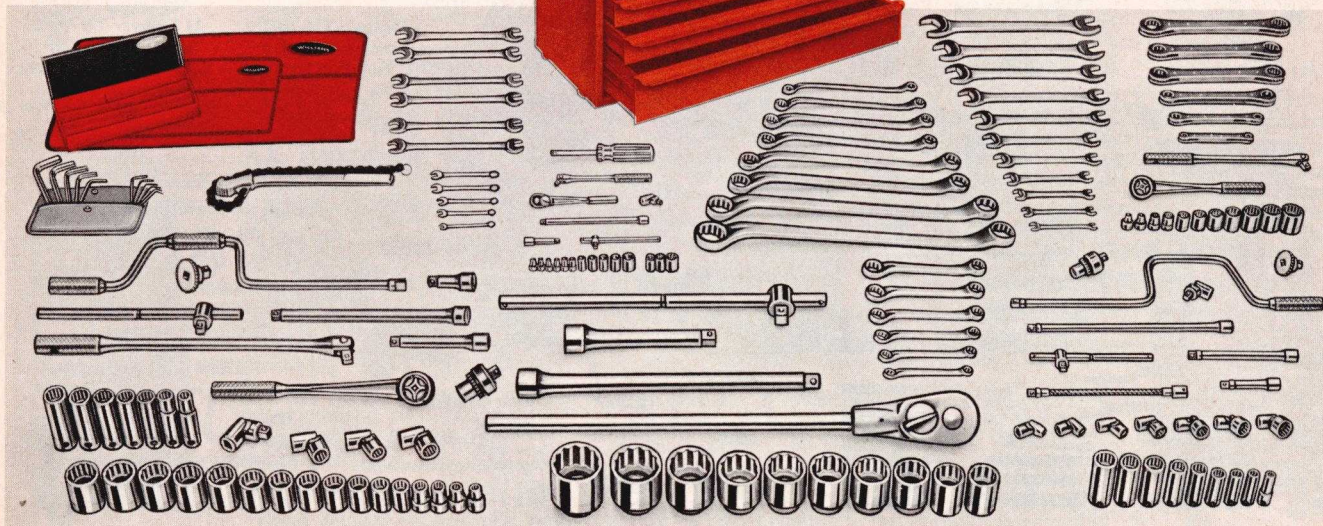
7-Drawer TB-2002 furnished with SET No. WSC-107C



6-Drawer
TB-2001
furnished with
SET No. WSC-107B



11-Drawer TB-4001 furnished with SET No. WSC-107D



SET No. WSC-107B

165 Tools in TB-2001 Tool Chest
25-7/8" x 12-1/8" x 14-1/2"
Total Weight, 138.9 lbs.

SET No. WSC-107C

165 Tools in TB-2002 Tool Chest
25-7/8" x 12-1/8" x 14-1/2"
Total Weight, 138.9 lbs.

SET No. WSC-107D

165 Tools in TB-4001 Tool Chest
25-7/8" x 12-1/8" x 18-1/8"
Total Weight, 160.9 lbs.

SET No. WSC-107T

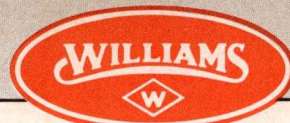
165 Tools Only
Total Weight, 72.9 lbs.

When it comes to sockets, drivers and wrenches, the range of opening sizes, from $\frac{1}{8}$ " to $1\frac{7}{8}$ ", and the variety of styles make this an ideal set for general machinery maintenance. Millwrights, mechanical equipment repairmen and contractors' mechanics will find this an outstanding selection of nut-turning tools.

Reinforced, welded construction of the sturdy TB-2001 six-

drawer, TB-2002 seven-drawer or TB-4001 11-drawer metal chest will provide many years of safe, convenient storage not only for the tools in this set but for many others that may be added from time to time. All drawers operate on smooth, easy glide runners and are conveniently divided. A sturdy cylinder lock actuates the latch bar that secures the hinged drop cover at both ends.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		ELECTRONIC WRS		LONG BOX WRS	
M-20A	Sliding Tee	B-110	5 1/2" Ext'n	S-15A	Speeder	SD-1226	1 3/16" 12 Pt Dp	XOEE-608	1/4"x1 1/4" opng	8723	3/8"x3 1/8" opng
M-42A	Flex Handle	B-115	10 1/2" Ext'n	S-20A	Sliding Tee	SD-1228	7/8" 12 Pt Dp	XOEE-609	3/32"x3/32" opng	8725B	1/2"x3 1/8" opng
M-51	Ratchet	B-140A	Universal Jt	S-41A	Flex Handle	SU-1220	3/8" 12 Pt Uni	XOEE-610	5/16"x3/16" opng	8027	1 3/32"x1 1/16" opng
M-102	2" Ext'n	B-1208	1 1/2" 12 Pt Skt	S-52	Ratchet	SU-1222	1 1/16" 12 Pt Uni	XOEE-611	1 1/32"x1 1/32" opng	8729	3/8"x3/8" opng
M-106	Spinner Hdl	B-1210	3/4" 12 Pt Skt	S-55A	Rcht Adapter	SU-1224	3/4" 12 Pt Uni	XOEE-1212	3/8"x3/8" opng	8031B	2 5/32"x1 1/16" opng
M-115	6" Ext'n	B-1212	3/4" 12 Pt Skt	S-70	Rcht Spinner					8033A	3/8"x1 1/16" opng
M-140A	Universal Jt	B-1214	3/16" 12 Pt Skt	S-102P	2 1/2" Ext'n					8735	1"x1 1/8" opng
M-604	1 1/2" 6 Pt Skt	B-1216	1 1/2" 12 Pt Skt	S-110P	5 1/2" Ext'n					8037	1 1/16"x1 1/4" opng
M-605	3/8" 6 Pt Skt	B-1218	9/16" 12 Pt Skt	S-115P	10 1/2" Ext'n						
M-606	3/16" 6 Pt Skt	B-1220	9/16" 12 Pt Skt	S-140A	Universal Jt	H-20A	Sliding Tee	1020	1/4"x3/16" opng		
M-607	3/16" 6 Pt Skt	B-1222	3/16" 12 Pt Skt	ST-1212	3/8" 12 Pt Skt	H-51A2	Ratchet	1721	5/16"x3/8" opng		
M-608	3/4" 6 Pt Skt	B-1224	3/16" 12 Pt Skt	ST-1214	7/16" 12 Pt Skt	H-110	8" Ext'n	1723	3/8"x7/16" opng		
M-609	3/2" 6 Pt Skt	B-1226	3/16" 12 Pt Skt	ST-1216	7/16" 12 Pt Skt	H-115	15 1/2" Ext'n	1725	7/16"x1 1/2" opng		
M-610	9/16" 6 Pt Skt	B-1228	3/8" 12 Pt Skt	ST-1218	9/16" 12 Pt Skt	H-1234	1 1/16" 12 Pt Skt	1725B	1/2"x3/16" opng		
M-611	1 1/32" 6 Pt Skt	BD-1212	7/8" 12 Pt Dp	ST-1220	9/16" 12 Pt Skt	H-1236	1 1/8" 12 Pt Skt	1727	5/16"x3/8" opng	9723	3/8"x3 1/8" opng
M-612	3/8" 6 Pt Skt	BD-1214	7/16" 12 Pt Dp	ST-1222	1 1/16" 12 Pt Skt	H-1240	1 1/8" 12 Pt Skt	1729	3/8"x3/4" opng	9725	7/16"x1 1/2" opng
M-614	7/16" 6 Pt Skt	BD-1216	7/16" 12 Pt Dp	ST-1224	3/4" 12 Pt Skt	H-1244	1 3/8" 12 Pt Skt	1029C	1 1/16"x1 1/16" opng	9725B	1/2"x3 1/8" opng
M-616	1 1/2" 6 Pt Skt	BD-1218	9/16" 12 Pt Dp	ST-1226	7/16" 12 Pt Skt	H-1246	1 1/16" 12 Pt Skt	1731A	3/4"x7/8" opng	9727	9/16"x3/8" opng
M-408	1 1/4" 4 Pt Skt	BD-1220	9/16" 12 Pt Dp	ST-1228	7/8" 12 Pt Skt	H-1248	1 1/2" 12 Pt Skt	1033A	7/8"x1 1/16" opng	9729	3/8"x3/4" opng
M-810	5/16" 8 Pt Skt	BD-1222	1 1/16" 12 Pt Dp	ST-1230	1 1/8" 12 Pt Skt	H-1252	1 1/8" 12 Pt Skt	1033C	1 1/16"x1" opng	9029C	1 1/16"x1 1/16" opng
M-812	3/8" 8 Pt Skt	BD-1224	3/4" 12 Pt Dp	ST-1232	1 1/2" 12 Pt Skt	H-1256	1 3/8" 12 Pt Skt				
		BD-1226	1 1/16" 12 Pt Dp	ST-1234	1 1/16" 12 Pt Skt	H-1258	1 1/16" 12 Pt Skt				
		BD-1228	7/8" 12 Pt Dp	ST-1236	1 1/8" 12 Pt Skt	H-1260	1 7/8" 12 Pt Skt				
		BU-1212	3/8" 12 Pt Uni	ST-1238	1 9/16" 12 Pt Skt						
		BU-1214	7/16" 12 Pt Uni	ST-1240	1 1/4" 12 Pt Skt						
		BU-1216	9/16" 12 Pt Uni	ST-1242	1 5/16" 12 Pt Skt						
		BU-1218	1 1/2" 12 Pt Uni	SD-1216	1 1/2" 12 Pt Dp						
		BU-1220	9/16" 12 Pt Uni	SD-1218	9/16" 12 Pt Dp						
		BU-1222	1 1/16" 12 Pt Uni	SD-1220	5/8" 12 Pt Dp						
		BU-1224	3/4" 12 Pt Uni	SD-1222	1 1/16" 12 Pt Dp						
				SD-1224	3/4" 12 Pt Dp						
3/8" DRIVE						RATCHET BOX WRS		TAPPET WRS		MISC. TOOLS	
B-15	Speeder					RB-810	1/4"x3/16" opng	1090	7/16"x1/2" opng	WS-44A	13 Hex Key Wrs
B-20A	Sliding Tee					RB-1214	3/8"x7/16" opng	1090	7/16"x1/2" opng	CW-4	Chain Wrench
B-40A	Flex Handle					RB-1618	1/2"x3/16" opng	1090D	1/2"x3/16" opng	TB-3A	Tool Box
B-52	Ratchet					RB-2022	5/8"x1 1/16" opng	1090D	1/2"x3/16" opng	K-22	Pouch 7"x11 1/2"
B-55	Rcht Adapter					RB-2024	5/8"x3/4" opng	1092F	5/8"x1 1/16" opng	K-23	Pouch 10 1/2"x18"
BFE-8	Flex Ext'n					RB-2428	3/4"x7/8" opng	1092F	5/8"x1 1/16" opng		
B-108	3" Ext'n										



SUPERCHEST SETS

2 ALLOY SOCKETS AND SETS



11 Drawer
Roller
Cabinet
TC-201C
furnished
with
SET No.
WSC-2001F

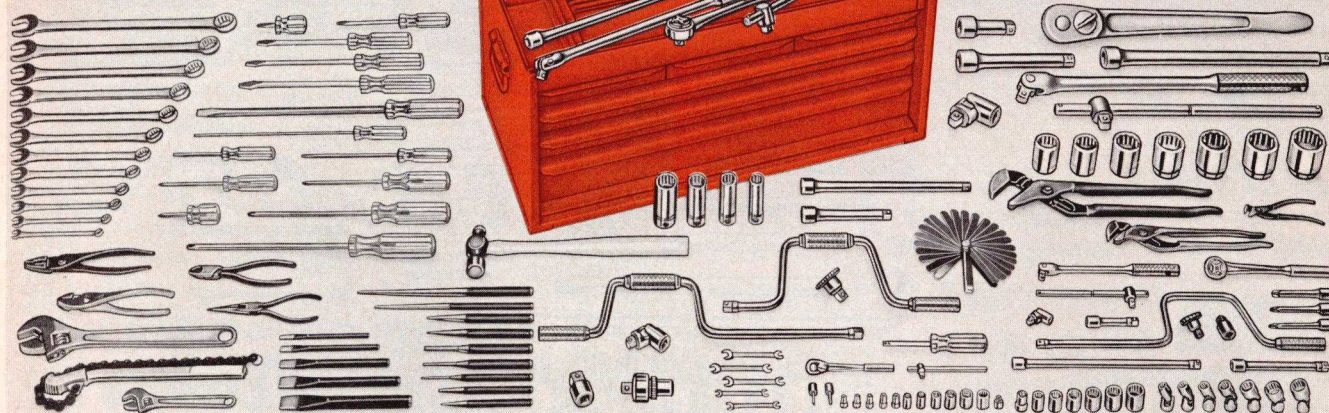
6 Drawer TB-2001
furnished with
SET No. WSC-2001C



7 Drawer TB-2002
furnished with
SET No. WSC-2001D



11 Drawer TB-4001
furnished with
SET No. WSC-2001E



SET No. WSC-2001C
146 Tools
In TB-2001 Tool Chest
25-7/8" x 12-1/8" x 14-1/2"
Total Weight, 140.4 lbs.

SET No. WSC-2001D
146 Tools
In TB-2002 Tool Chest
25-7/8" x 12-1/8" x 14-1/2"
Total Weight, 140.4 lbs.

SET No. WSC-2001E
146 Tools
In TB-4001 Tool Chest
25-7/8" x 12-1/8" x 18-1/8"
Total Weight, 163.4 lbs.

SET No. WSC-2001F
146 Tools
In TC-201C Roll. Cab.
26-3/8" x 18" x 40-1/4"
Total Weight, 276.4 lbs.

SET No. WSC-2001T
146 Tools
Only
Total Weight, 74.4 lbs.

With hex or 12-point socket openings from $\frac{1}{8}$ " thru $1\frac{1}{2}$ " and a variety of drivers in $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " drives this becomes a remarkably versatile set. Any detachable socket tool a mechanic could possibly desire can be "tailor-made" instantly from this amazingly wide selection. Adapters in each of the drive sizes make it possible to use drivers of one size with sockets of the next larger drive size.

In addition to an extremely flexible socket wrench system, this set is adequately filled with midget open-end wrenches, combina-

tion open end-box wrenches, adjustable wrenches, pliers, punches, chisels and screwdrivers plus a ball pein hammer, feeler gauge set and a 4" capacity chain wrench.

The wide range of work that can be covered by such a comprehensive set as this makes it ideal for general maintenance mechanics, millwrights, mechanical equipment repairmen, general contractors, mechanics on unit-type assembly lines, automotive mechanics and many others. With this set the operator is sure to have the right tool at the right time.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE		3/4" DRIVE		WRENCHES		SCREWDRIVERS	
M-604	$\frac{1}{8}$ " 6 Pt Skt	BU-1214	$\frac{7}{16}$ " 12 Pt Uni	ST-1220	$\frac{5}{8}$ " 12 Pt Skt	H-1234	$1\frac{1}{16}$ " 12 Pt Skt	1165	$1\frac{1}{16}$ "x $1\frac{1}{16}$ " Comb.	DP-1	Phillips No. 1
M-605	$\frac{9}{32}$ " 6 Pt Skt	BU-1216	$\frac{1}{2}$ " 12 Pt Uni	ST-1221	$2\frac{1}{32}$ " 12 Pt Skt	H-1236	$1\frac{1}{8}$ " 12 Pt Skt	1166	$\frac{3}{4}$ "x $\frac{3}{4}$ " Comb.	DP-2	Phillips No. 2
M-606	$\frac{5}{16}$ " 6 Pt Skt	BU-1218	$\frac{9}{16}$ " 12 Pt Uni	ST-1222	$1\frac{1}{16}$ " 12 Pt Skt	H-1240	$1\frac{1}{4}$ " 12 Pt Skt	1167A	$1\frac{1}{16}$ "x $1\frac{1}{16}$ " Comb.	DP-3	Phillips No. 3
M-607	$\frac{3}{8}$ " 6 Pt Skt	BU-1220	$\frac{5}{8}$ " 12 Pt Uni	ST-1224	$\frac{3}{4}$ " 12 Pt Skt	H-1242	$1\frac{5}{16}$ " 12 Pt Skt	1167	$\frac{7}{8}$ "x $\frac{1}{8}$ " Comb.	DP-4	Phillips No. 4
M-608	$\frac{1}{2}$ " 6 Pt Skt	BU-1222	$1\frac{1}{16}$ " 12 Pt Uni	ST-1225	$2\frac{5}{32}$ " 12 Pt Skt	H-1246	$1\frac{7}{16}$ " 12 Pt Skt	1168	$1\frac{1}{16}$ "x $1\frac{1}{16}$ " Comb.	DP-62	Phillips No. 2
M-609	$\frac{9}{32}$ " 6 Pt Skt	BU-1224	$\frac{3}{4}$ " 12 Pt Uni	ST-1226	$1\frac{1}{16}$ " 12 Pt Skt	H-1248	$1\frac{1}{2}$ " 12 Pt Skt	1170	1"x1" Comb.	PUNCHES & CHISELS	
M-1210	$\frac{5}{16}$ " 12 Pt Skt	B-15	Speeder	ST-1228	$\frac{7}{8}$ " 12 Pt Skt	H-1252	$1\frac{5}{8}$ " 12 Pt Skt	AP-6	6" Adjustable	P-4	$\frac{1}{8}$ " x 6" Pin
M-1211	$1\frac{1}{32}$ " 12 Pt Skt	B-20A	Sliding Tee	ST-1230	$1\frac{1}{16}$ " 12 Pt Skt	H-20A	Sliding Tee	AP-12	12" Adjustable	P-6	$\frac{3}{16}$ " x 6" Pin
M-1212	$\frac{3}{8}$ " 12 Pt Skt	B-40A	Flex Handle	ST-1231	$3\frac{1}{32}$ " 12 Pt Skt	H-41A	Flex Handle	PLIERS		P-8	$\frac{1}{4}$ " x 6" Pin
M-1214	$\frac{7}{16}$ " 12 Pt Skt	B-52	Ratchet	ST-1232	1" 12 Pt Skt	H-51	Ratchet	PL-6	6" Slip Jt	P-13	$\frac{3}{32}$ " x 6" Solid
M-1216	$\frac{1}{2}$ " 12 Pt Skt	B-70	Reht Spinner	SD-1222	$1\frac{1}{16}$ " 12 Pt Dp	H-104	4" Ext'n	PL-46	6" Diag Cut	P-14	$\frac{1}{8}$ " x 6" Solid
M-20A	Sliding Tee	B-108	3" Ext'n	SD-1226	$1\frac{1}{16}$ " 12 Pt Dp	H-110	8" Ext'n	PL-76	6" Chn Nose	P-25	$\frac{5}{32}$ " x 9" Taper
M-51	Ratchet	B-110	$5\frac{1}{2}$ " Ext'n	SD-1228	$\frac{7}{8}$ " 12 Pt Dp	H-115	$15\frac{1}{2}$ " Ext'n	PL-370	7" Slip Jt	P-26	$\frac{3}{16}$ " x 10" Taper
M-106	Spinner Hdle	B-115	$10\frac{1}{2}$ " Ext'n	SD-1232	1" 12 Pt Dp	H-140A	Universal Jt	PL-1519	5" Superjoint	P-30	5" Prick
MB-130	$\frac{1}{4}$ "x $\frac{3}{8}$ " Adpt	B-140A	Universal Jt	S-10A	Speeder	WRENCHES		PL-1520	10" Superjoint	P-40	5" Center
MP-1	Phillips No. 1	BP-2	Phillips No. 2	S-15A	Speeder	1106	$1\frac{3}{16}$ "x $\frac{7}{32}$ " End Wr	PL-1522C	14" Superjoint	C-8	$\frac{1}{4}$ " Cold
MP-2	Phillips No. 2	BP-3	Phillips No. 3	S-41A	Flex Handle	1107	$1\frac{5}{16}$ "x $\frac{1}{4}$ " End Wr	SCREWDRIVERS		C-12	$\frac{3}{8}$ " Cold
3/8" DRIVE		BP-4	Phillips No. 4	S-52	Ratchet	1108	$\frac{3}{32}$ "x $1\frac{1}{32}$ " End Wr	DS-4	4" Sq Blade	C-16	$\frac{1}{2}$ " Cold
B-1212	$\frac{3}{8}$ " 12 Pt Skt	BS-130	$\frac{3}{8}$ "x $\frac{1}{2}$ " Adpt	S-55A	Reht Adapter	1108A	$\frac{1}{4}$ "x $\frac{9}{16}$ " End Wr	DS-6	6" Sq Blade	C-20	$\frac{5}{8}$ " Cold
B-1214	$\frac{7}{16}$ " 12 Pt Skt	1/2" DRIVE		S-70	Reht Spinner	1109	$\frac{5}{16}$ "x $\frac{3}{8}$ " End Wr	DS-8	8" Sq Blade	C-24	$\frac{3}{4}$ " Cold
B-1216	$\frac{1}{2}$ " 12 Pt Skt	ST-1212	$\frac{3}{8}$ " 12 Pt Skt	S-110P	$5\frac{1}{2}$ " Ext'n	1159	$\frac{5}{16}$ "x $\frac{9}{16}$ " Comb	DS-10	10" Sq Blade	MISCELLANEOUS	
B-1218	$\frac{9}{16}$ " 12 Pt Skt	ST-1214	$\frac{7}{16}$ " 12 Pt Skt	S-115P	$10\frac{1}{2}$ " Ext'n	1160	$\frac{3}{8}$ "x $\frac{3}{8}$ " Comb	DS-12	12" Sq Blade	HBP-2-0	$\frac{3}{4}$ lb. Hammer
B-1220	$\frac{5}{8}$ " 12 Pt Skt	ST-1216	$\frac{1}{2}$ " 12 Pt Skt	S-121P	20" Ext'n	1161	$\frac{7}{16}$ "x $\frac{7}{16}$ " Comb	DE-43	3" Electr'n	CW-4	Chain Wr
B-1222	$1\frac{1}{16}$ " 12 Pt Skt	ST-1218	$\frac{9}{16}$ " 12 Pt Skt	S-140A	Universal Jt	1162	$\frac{1}{2}$ "x $\frac{1}{2}$ " Comb	DE-46	6" Electr'n	GS-1	Feeler Gauge
B-1224	$\frac{3}{4}$ " 12 Pt Skt	ST-1219	$1\frac{3}{32}$ " 12 Pt Skt	SH-130	$\frac{1}{2}$ "x $\frac{3}{4}$ " Adpt	1163	$\frac{5}{16}$ "x $\frac{9}{16}$ " Comb	DE-50	10" Electr'n		
BU-1212	$\frac{3}{8}$ " 12 Pt Uni					1164	$\frac{3}{8}$ "x $\frac{5}{8}$ " Comb	DS-62	$1\frac{1}{2}$ " Stubby		



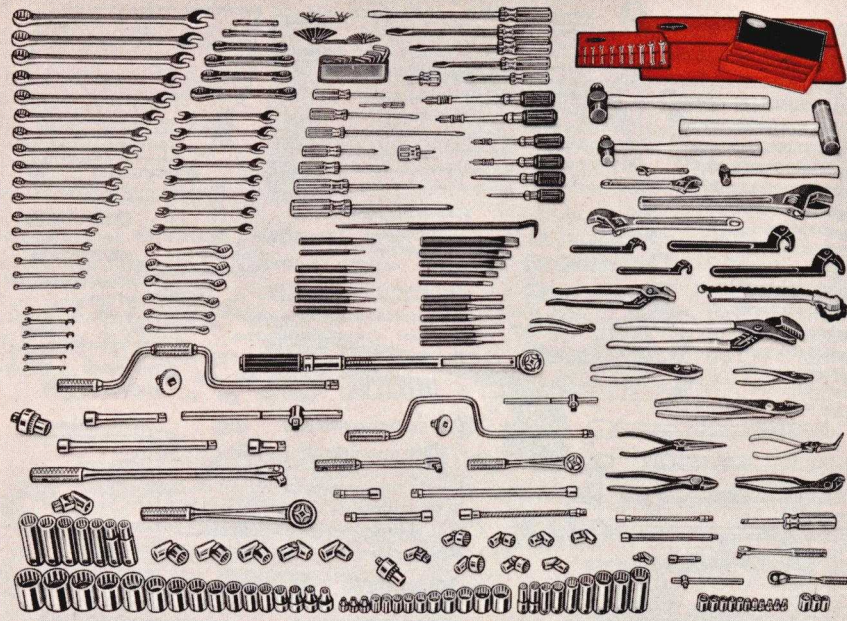
GENERAL SERVICE MOBILE WORK SHOPS



SET No. WSC-108B
furnished with
TB-2001, TB-3001, TC-101C



SET No. WSC-108C
furnished with
TB-2002, TB-3001, TC-102C



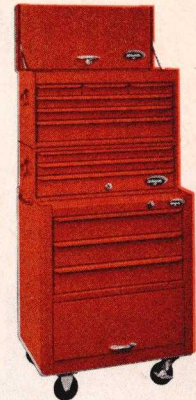
WSC-108B
231 Tools
In TB-2001,
TB-3001 and
TC-101C Rollcab
Total Wgt., 283 lbs.

WSC-108C
231 Tools
In TB-2002,
TB-3001 and
TC-102C Rollcab
Total Wgt., 308 lbs.

WSC-108D
231 Tools
In TB-2001,
TB-3001 and
TC-105C Rollcab
Total Wgt., 312 lbs.

WSC-108E
231 Tools
In TB-2002,
TB-3001 and
TC-105C Rollcab
Total Wgt., 312 lbs.

WSC-108T
231 Tools
Only
Total Weight
85 lbs.



SET No. WSC-108D
furnished with
TB-2001, TB-3001, TC-105C



SET No. WSC-108E
furnished with
TB-2002, TB-3001, TC-105C

From delicate service jobs, requiring only $\frac{1}{8}$ " hex opening, to heavy repair or assembly jobs requiring $1\frac{1}{4}$ " openings, this is the set that can do them all. It even includes a micrometer-type torque wrench that will measure 10 to 250 foot pounds. In this set the service mechanic has everything he needs right at the job to do it quickly and safely.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
1/4" DRIVE		3/8" DRIVE		1/2" DRIVE		ELECTRONIC WRS		TAPPET WRS		PLIERS	
M-20A	Sliding Tee	B-1220	$\frac{3}{8}$ " 12 Pt Skt	ST-1222	$\frac{1}{16}$ " 12 Pt Skt	XOEE-604	$\frac{1}{8}$ "x $\frac{1}{8}$ " opng	(2) 1090	$\frac{1}{16}$ "x $\frac{1}{2}$ " opng	PL-8	8" Slip Jt
M-42A	Flex Handle	B-1222	$\frac{1}{16}$ " 12 Pt Skt	ST-1224	$\frac{3}{4}$ " 12 Pt Skt	XOEE-605	$\frac{5}{32}$ "x $\frac{3}{32}$ " opng	(2) 1090D	$\frac{1}{8}$ "x $\frac{9}{16}$ " opng	PL-10	10" Slip Jt
M-51	Ratchet	B-1224	$\frac{3}{4}$ " 12 Pt Skt	ST-1226	$\frac{1}{16}$ " 12 Pt Skt	XOEE-606	$\frac{3}{16}$ "x $\frac{3}{16}$ " opng	(2) 1092F	$\frac{5}{8}$ "x $\frac{1}{16}$ " opng	PL-15	5" Slip Jt
MFE-6	Flex Ext'n	B-1226	$\frac{1}{16}$ " 12 Pt Skt	ST-1228	$\frac{7}{8}$ " 12 Pt Skt	XOEE-607	$\frac{3}{32}$ "x $\frac{3}{32}$ " opng	(2) 1094	$\frac{3}{4}$ "x $\frac{7}{8}$ " opng	PL-47	7" Diag Cut
M-102	2" Ext'n	B-1228	$\frac{3}{8}$ " 12 Pt Skt	ST-1230	$\frac{1}{16}$ " 12 Pt Skt	XOEE-608	$\frac{1}{4}$ "x $\frac{1}{4}$ " opng	ADJUSTABLE WRS		PL-67	7" Battery
M-106	Spinner Hdl	B-1230	$\frac{1}{16}$ " 12 Pt Skt	ST-1232	1" 12 Pt Skt	XOEE-609	$\frac{3}{32}$ "x $\frac{3}{32}$ " opng	AP-4	4" Adjustable	PL-77	7" Chn Nose
M-115	6" Ext'n	B-1232	1" 12 Pt Skt	ST-1234	$\frac{1}{16}$ " 12 Pt Skt	XOEE-610	$\frac{1}{16}$ "x $\frac{1}{16}$ " opng	AP-8	8" Adjustable	PL-126C	6" Bent Ndl Ns
M-140A	Universal Jt	BD-1212	$\frac{3}{8}$ " 12 Pt Dp	ST-1236	$\frac{1}{16}$ " 12 Pt Skt	XOEE-611	$\frac{1}{32}$ "x $\frac{1}{32}$ " opng	AP-12	12" Adjustable	PL-1519	5" Superjoint
M-604	$\frac{1}{8}$ " 6 Pt Skt	BD-1214	$\frac{1}{16}$ " 12 Pt Dp	ST-1238	$\frac{1}{16}$ " 12 Pt Skt	XOEE-612	$\frac{1}{8}$ "x $\frac{3}{8}$ " opng	AP-15	15" Adjustable	PL-1520	10" Superjoint
M-605	$\frac{5}{32}$ " 6 Pt Skt	BD-1216	$\frac{1}{2}$ " 12 Pt Dp	ST-1240	$\frac{1}{16}$ " 12 Pt Skt	9029C		CW-4	Chain Wrench	PL-1522C	14" Superjoint
M-606	$\frac{3}{16}$ " 6 Pt Skt	BD-1218	$\frac{9}{16}$ " 12 Pt Dp	ST-1242	$\frac{1}{16}$ " 12 Pt Skt	SHORT BOX WRS		SCREWDRIVERS		CHISELS	
M-607	$\frac{3}{32}$ " 6 Pt Skt	BD-1220	$\frac{5}{8}$ " 12 Pt Dp	SD-1216	$\frac{1}{2}$ " 12 Pt Dp	9723	$\frac{3}{8}$ "x $\frac{7}{16}$ " opng	DE-43	3" Electr'n	C-12	$\frac{3}{8}$ " Cold
M-608	$\frac{1}{4}$ " 6 Pt Skt	BD-1222	$\frac{1}{16}$ " 12 Pt Dp	SD-1218	$\frac{9}{16}$ " 12 Pt Dp	9725	$\frac{1}{2}$ "x $\frac{1}{2}$ " opng	DE-46	6" Electr'n	C-16	$\frac{1}{2}$ " Cold
M-609	$\frac{3}{32}$ " 6 Pt Skt	BD-1224	$\frac{3}{4}$ " 12 Pt Dp	SD-1220	$\frac{1}{2}$ " 12 Pt Dp	9725B	$\frac{1}{2}$ "x $\frac{9}{16}$ " opng	DE-50	10" Electr'n	C-20	$\frac{3}{8}$ " Cold
M-610	$\frac{1}{16}$ " 6 Pt Skt	BD-1226	$\frac{1}{16}$ " 12 Pt Dp	SD-1222	$\frac{1}{16}$ " 12 Pt Dp	9727	$\frac{1}{16}$ "x $\frac{5}{8}$ " opng	DE-52	2" Pocket	C-24	$\frac{3}{4}$ " Cold
M-611	$\frac{1}{32}$ " 6 Pt Skt	BD-1228	$\frac{3}{8}$ " 12 Pt Dp	SD-1224	$\frac{3}{4}$ " 12 Pt Dp	9729	$\frac{5}{8}$ "x $\frac{3}{4}$ " opng	DP-1	Phillips No. 1	C-28	$\frac{7}{8}$ " Cold
M-612	$\frac{3}{8}$ " 6 Pt Skt	BU-1212	$\frac{3}{8}$ " 12 Pt Uni	SD-1226	$\frac{1}{16}$ " 12 Pt Dp	9029C	$\frac{1}{16}$ "x $\frac{1}{16}$ " opng	DP-2	Phillips No. 2	PUNCHES	
M-614	$\frac{1}{16}$ " 6 Pt Skt	BU-1214	$\frac{1}{16}$ " 12 Pt Uni	SD-1228	$\frac{1}{2}$ " 12 Pt Dp	RATCHET BOX WRS		DP-3	Phillips No. 3	P-3	$\frac{3}{32}$ "x6" Pin
M-616	$\frac{1}{2}$ " 6 Pt Skt	BU-1216	$\frac{1}{2}$ " 12 Pt Uni	SU-1216	$\frac{1}{2}$ " 12 Pt Uni	RB-810	$\frac{1}{4}$ "x $\frac{9}{16}$ " opng	DP-4	Phillips No. 4	P-4	$\frac{1}{8}$ "x6" Pin
M-408	$\frac{1}{4}$ " 4 Pt Skt	BU-1218	$\frac{9}{16}$ " 12 Pt Uni	SU-1218	$\frac{9}{16}$ " 12 Pt Uni	RB-1214	$\frac{3}{8}$ "x $\frac{7}{16}$ " opng	DP-62	Phillips No. 2	P-5	$\frac{3}{32}$ "x6" Pin
M-810	$\frac{9}{16}$ " 8 Pt Skt	BU-1220	$\frac{5}{8}$ " 12 Pt Uni	SU-1220	$\frac{5}{8}$ " 12 Pt Uni	RB-1618	$\frac{1}{2}$ "x $\frac{9}{16}$ " opng	DS-4	4" Sq Blade	P-6	$\frac{1}{16}$ "x6" Pin
M-812	$\frac{3}{8}$ " 8 Pt Skt	BU-1222	$\frac{1}{16}$ " 12 Pt Uni	SU-1222	$\frac{1}{16}$ " 12 Pt Uni	RB-2022	$\frac{5}{8}$ "x $\frac{1}{16}$ " opng	DS-6	6" Sq Blade	P-8	$\frac{1}{4}$ "x6" Pin
		BU-1224	$\frac{3}{4}$ " 12 Pt Uni	SU-1224	$\frac{3}{4}$ " 12 Pt Uni	RB-2024	$\frac{5}{8}$ "x $\frac{3}{4}$ " opng	DS-8	8" Sq Blade	P-10	$\frac{1}{16}$ "x6" Pin
						RB-2428	$\frac{3}{4}$ "x $\frac{7}{8}$ " opng	DS-10	10" Sq Blade	P-13	$\frac{3}{32}$ "x6" Solid
3/8" DRIVE		1/2" DRIVE		COMBINATION WRS		15°-60° ANGLE WRS		DR-12	12" Sq Blade	P-14	$\frac{1}{8}$ "x6" Solid
B-15	Speeder	S-15A	Speeder	1158	$\frac{1}{4}$ "x $\frac{1}{4}$ " opng	OEE-1416	$\frac{3}{32}$ "x $\frac{1}{4}$ " opng	DPHG-1	Phillips No. 1	P-15	$\frac{3}{32}$ "x6" Solid
B-20A	Sliding Tee	S-20A	Sliding Tee	1159	$\frac{5}{16}$ "x $\frac{9}{16}$ " opng	OEE-1614	$\frac{1}{4}$ "x $\frac{1}{32}$ " opng	DPHG-2	Phillips No. 2	P-16	$\frac{1}{16}$ "x6" Solid
B-40A	Flex Handle	S-41A	Flex Handle	1159A	$\frac{1}{32}$ "x $\frac{1}{32}$ " opng	OEE-1820	$\frac{3}{32}$ "x $\frac{9}{16}$ " opng	DSHG-44	4" Screw Hld	P-17	$\frac{1}{4}$ "x6" Solid
B-52	Ratchet	S-52	Ratchet	1160	$\frac{3}{8}$ "x $\frac{3}{8}$ " opng	OEE-2018	$\frac{5}{16}$ "x $\frac{5}{32}$ " opng	DSHG-46	6" Screw Hld	P-40	5" Center
B-55	Reht Adapter	S-55A	Reht Adapter	1161	$\frac{7}{16}$ "x $\frac{7}{16}$ " opng	OEE-2224	$\frac{1}{32}$ "x $\frac{3}{8}$ " opng	DSHG-64	4" Screw Hld	P-42	6" Center
B-70	Reht Spinner	S-70	Reht Spinner	1162	$\frac{1}{2}$ "x $\frac{1}{2}$ " opng	OEE-2422	$\frac{3}{8}$ "x $\frac{1}{32}$ " opng	DSHG-76	7" Screw Hld	MISC. TOOLS	
BFE-8	Flex Ext'n	S-102P	2 $\frac{1}{2}$ " Ext'n	1163	$\frac{5}{8}$ "x $\frac{9}{16}$ " opng	SPANNER WRS		HBP-5-0	4 oz Hammer	WS-44A	13 Hex Key Wrs
B-108	3" Ext'n	S-110P	5 $\frac{1}{2}$ " Ext'n	1164	$\frac{3}{4}$ "x $\frac{5}{8}$ " opng	471	$\frac{3}{4}$ "-2" Dia	HBP-2-0	$\frac{3}{4}$ lb Hammer	C-715	15" Roll Bar
B-110	5 $\frac{1}{2}$ " Ext'n	S-115P	10 $\frac{1}{2}$ " Ext'n	1165	$\frac{1}{16}$ "x $\frac{1}{16}$ " opng	474	2"-4 $\frac{1}{4}$ " Dia	HBP-4	2 lb Hammer	GS-3	Feeler Ga Set
B-115	10 $\frac{1}{2}$ " Ext'n	S-140A	Universal Jt	1166	$\frac{3}{4}$ "x $\frac{3}{4}$ " opng	O-471	$\frac{3}{4}$ "-2" Dia	HSF-155	Hammer Body	K-23	Feeler Ga Set
B-140A	Universal Jt	STW-3RCF	Torque Wr	1167A	$\frac{3}{16}$ "x $\frac{1}{16}$ " opng	O-474	2"-4 $\frac{1}{4}$ " Dia	HSF-15H	Hard Tip	K-25	Pouch 10 $\frac{1}{2}$ "x18"
B-1208	$\frac{1}{4}$ " 12 Pt Skt		10-250 Ft Lb	1167	$\frac{7}{8}$ "x $\frac{7}{8}$ " opng			HSF-15S	Soft Tip	TB-3A	9 Pocket Kit
B-1210	$\frac{9}{16}$ " 12 Pt Skt	ST-1212	$\frac{3}{8}$ " 12 Pt Skt	1168	$\frac{1}{16}$ "x $\frac{1}{16}$ " opng						Tool Box
B-1212	$\frac{3}{8}$ " 12 Pt Skt	ST-1214	$\frac{1}{16}$ " 12 Pt Skt	1170	1"x1" opng						
B-1214	$\frac{7}{16}$ " 12 Pt Skt	ST-1216	$\frac{1}{2}$ " 12 Pt Skt	1171	$\frac{1}{16}$ "x $\frac{1}{16}$ " opng						
B-1216	$\frac{1}{2}$ " 12 Pt Skt	ST-1218	$\frac{9}{16}$ " 12 Pt Skt	1172	$\frac{1}{8}$ "x $\frac{1}{8}$ " opng						
B-1218	$\frac{9}{16}$ " 12 Pt Skt	ST-1220	$\frac{5}{8}$ " 12 Pt Skt	1173	$\frac{1}{4}$ "x $\frac{1}{4}$ " opng						

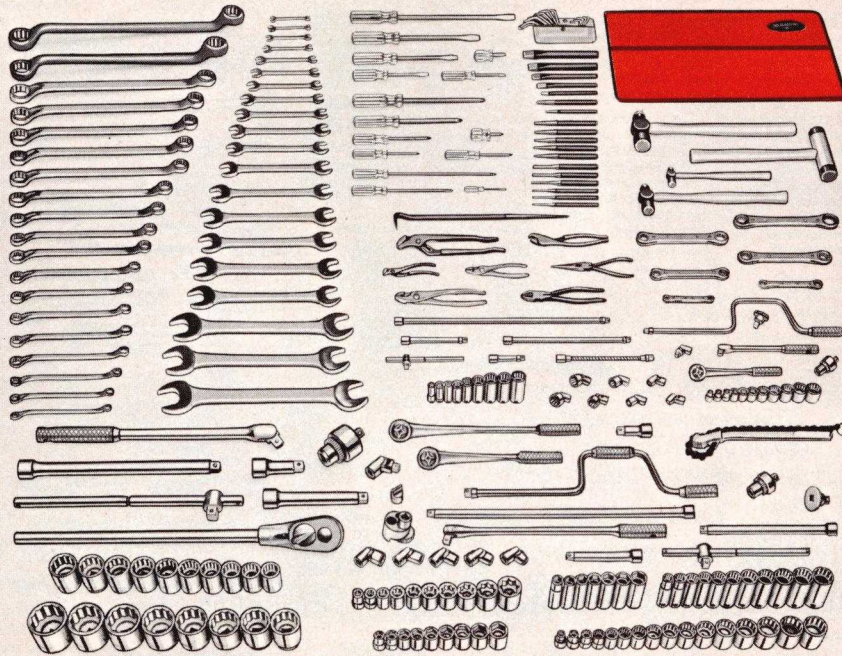


INDUSTRIAL MAINTENANCE MOBILE TOOL SETS

2 ALLOY SOCKETS AND SETS



TB-5001
Tool Chest
and
TC-501C
Roller Cabinet
furnished with
SET No. WSC-109B



SET No. WSC-109B
240 Tools in TB-5001 Chest
and TC-501C Roller Cabinet
Total Weight, 483 lbs.

SET No. WSC-109C
240 Tools in TB-5002 Chest
and TC-502C Roller Cabinet
Total Weight, 509 lbs.

WSC-109T
240 Tools
Only
Total Weight, 156 lbs.



TB-5002
Tool Chest
and
TC-502C
Mobile Cabinet
furnished with
SET No. WSC-109C

Solve nut-turning and other maintenance problems in a jiffy with this array of 240 tools, all designed to perform with speed and safety. Add to this the convenience of a heavy duty industrial-

type mobile unit and you have a portable tool department that is unsurpassed. The accumulated seconds and minutes saved on each operation will soon add up to big dollar savings.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/8" DRIVE		1/2" DRIVE		1/2" DRIVE		3/4" DRIVE		END WRENCHES		SCREWDRIVERS	
B-15	Speeder	S-15A	Speeder	SD-624	3/4" 6 Pt Dp	H-1238	1 1/16" 12 Pt Skt	1021	5/16"x1 1/8" opng	DE-43	3" Electr'n
B-20A	Sliding Tee	S-20A	Sliding Tee	SD-626	1 1/16" 6 Pt Dp	H-1240	1 1/4" 12 Pt Skt	1721	5/16"x3/8" opng	DE-46	6" Electr'n
B-40A	Flex Handle	S-41A	Flex Handle	SD-628	7/8" 6 Pt Dp	H-1242	1 5/16" 12 Pt Skt	1723	3/8"x3/16" opng	DE-50	10" Electr'n
B-52	Ratchet	S-52	11 1/4" Ratchet	SD-1216	1 1/2" 12 Pt Dp	H-1244	1 3/8" 12 Pt Skt	1725	7/16"x1/2" opng	DE-52	2" Pocket
B-55	Reht Adapter	S-53	15" Ratchet	SD-1218	9/16" 12 Pt Dp	H-1246	1 1/16" 12 Pt Skt	1725B	1/2"x3/8" opng	DP-0	Phillips No. 0
B-70	Reht Spinner	S-55A	Reht Adapter	SD-1220	3/8" 12 Pt Dp	H-1248	1 1/2" 12 Pt Skt	1727	9/16"x5/8" opng	DP-1	Phillips No. 1
BFE-8	Flex Ext'n	S-60D	Stud Remover	SD-1222	1 1/16" 12 Pt Dp	H-1250	1 9/16" 12 Pt Skt	1027	1 3/32"x1 1/8" opng	DP-2	Phillips No. 2
B-108	3" Ext'n	S-70	Reht Spinner	SD-1224	3/4" 12 Pt Dp	H-1252	1 3/8" 12 Pt Skt	1729	3/8"x3/8" opng	DP-3	Phillips No. 3
B-110	5 1/2" Ext'n	S-140A	Universal Jt	SD-1226	1 1/16" 12 Pt Dp	H-1254	1 1/16" 12 Pt Skt	1029C	1 1/16"x1 1/8" opng	DP-4	Phillips No. 4
B-115	10 1/2" Ext'n	S-102P	2 1/2" Ext'n	SD-1228	7/8" 12 Pt Dp	H-1256	1 3/4" 12 Pt Skt	1731A	3/4"x3/8" opng	DP-62	Phillips No. 2
B-118	18" Ext'n	S-110P	5 1/2" Ext'n	SD-1230	1 1/16" 12 Pt Dp	H-1258	1 13/16" 12 Pt Skt	1031B	5/16"x1 1/8" opng	DR-24	4" Rd Blade
B-140A	Universal Jt	S-115P	10 1/2" Ext'n	SD-1232	1" 12 Pt Dp	H-1260	1 7/8" 12 Pt Skt	1033A	7/8"x1 1/8" opng	DR-26	6" Rd Blade
		S-121P	20" Ext'n	SD-1234	1 1/16" 12 Pt Dp	H-1264	2" 12 Pt Skt	1033C	1 1/8"x1" opng	DR-28	8" Rd Blade
		SB-30	Socket Bit	SD-1236	1 1/8" 12 Pt Dp			1735	1"x1 1/8" opng	DR-32	12" Rd Blade
B-1208	1/4" 12 Pt Skt	ST-616	3/2" 6 Pt Skt	SU-1216	1/2" 12 Pt Uni	LONG BOX WRS		1036B	1 1/16"x1 1/8" opng	DS-62	1 1/2" Stubby
B-1210	5/16" 12 Pt Skt	ST-618	9/16" 6 Pt Skt	SU-1218	9/16" 12 Pt Uni	8723	3/8"x7/16" opng	1037	1 1/8"x1 1/4" opng	PLIERS	
B-1212	3/8" 12 Pt Skt	ST-620	5/8" 6 Pt Skt	SU-1220	3/4" 12 Pt Uni	8725	7/16"x1/2" opng	1039A	1 1/16"x1 1/2" opng	PL-8	8" Slip Jt
B-1214	7/16" 12 Pt Skt	ST-622	1 1/16" 6 Pt Skt	SU-1222	1 1/16" 12 Pt Uni	8725B	1 1/2"x3/16" opng	1039C	1 3/8"x1 7/16" opng	PL-15	5" Slip Jt
B-1216	1/2" 12 Pt Skt	ST-624	3/4" 6 Pt Skt	SU-1224	3/4" 12 Pt Uni	8727	9/16"x3/8" opng	1041	1 7/16"x1 5/8" opng	PL-47	7" Diag Cut
B-1218	9/16" 12 Pt Skt	ST-626	1 1/16" 6 Pt Skt	ST-812	3/8" 8 Pt Skt	8027	1 9/32"x1 1/16" opng	PUNCHES		PL-67	7" Battery
B-1220	5/8" 12 Pt Skt	ST-628	7/8" 6 Pt Skt	ST-816	1/2" 8 Pt Skt	8727A	5/8"x1 1/16" opng	P-3	3/32"x6" Pin	PL-77	7" Chn Nose
B-1222	1 1/16" 12 Pt Skt	ST-630	1 1/16" 6 Pt Skt	ST-818	9/16" 8 Pt Skt	8729	5/8"x3/4" opng	P-4	1/2"x6" Pin	PL-1519	5" Superjoint
B-1224	3/4" 12 Pt Skt	ST-632	1" 6 Pt Skt	ST-820	3/8" 8 Pt Skt	8029	1 1/16"x2 3/32" opng	P-5	5/16"x6" Pin	PL-1520	10" Superjoint
B-1226	1 1/16" 12 Pt Skt	ST-1212	3/8" 12 Pt Skt	ST-822	1 1/16" 8 Pt Skt	8731A	3/4"x7/8" opng	P-6	3/16"x6" Pin	HAMMERS	
B-1228	7/8" 12 Pt Skt	ST-1214	7/16" 12 Pt Skt	ST-824	3/4" 8 Pt Skt	8031B	2 3/32"x1 1/16" opng	P-8	1/4"x6" Pin	HBP-5-0	4 oz Hammer
		ST-1216	1/2" 12 Pt Skt	ST-826	1 1/16" 8 Pt Skt	8033A	7/8"x1 1/16" opng	P-10	5/16"x6" Pin	HBP-2-0	3/4 lb Hammer
BD-1212	3/8" 12 Pt Dp	ST-1218	9/16" 12 Pt Skt	ST-828	7/8" 8 Pt Skt	8033C	1 1/16"x1" opng	P-13	3/32"x6" Solid	HBP-4	2 lb Hammer
BD-1214	7/16" 12 Pt Dp	ST-1220	5/8" 12 Pt Skt	ST-832	1" 8 Pt Skt	8735	1"x1 1/8" opng	P-14	1/2"x6" Solid	HSF-155	Hammer Body
BD-1216	1/2" 12 Pt Dp	ST-1222	1 1/16" 12 Pt Skt	3/4" DRIVE		8735A	1 1/16"x1 1/8" opng	P-15	5/16"x6" Solid	HSF-15H	Hard Tip
BD-1218	9/16" 12 Pt Dp	ST-1224	3/4" 12 Pt Skt	H-20A	Sliding Tee	8037	1 1/16"x1 1/4" opng	P-16	3/16"x6" Solid	HSF-15S	Soft Tip
BD-1220	5/8" 12 Pt Dp	ST-1226	1 1/16" 12 Pt Skt	H-41A	Flex Handle	8037A	1 1/8"x1 1/16" opng	P-17	1/4"x6" Solid	MISC. TOOLS	
BD-1222	1 1/16" 12 Pt Dp	ST-1228	7/8" 12 Pt Skt	H-51A2	Ratchet	8039	1 1/4"x1 7/16" opng	P-40	5" Center	WS-44A	13 Hex Key Wrs
BD-1224	3/4" 12 Pt Dp	ST-1230	1 1/16" 12 Pt Skt	H-55	Reht Adapter	8040B	1 7/16"x1 1/2" opng	P-42	6" Center	C-715	15" Roll Bar
BD-1226	1 1/16" 12 Pt Dp	ST-1232	1" 12 Pt Skt	H-104	4" Ext'n	RATCHET BOX WRS		CHISELS		K-24	Pouch 14"x22 1/2"
BD-1228	7/8" 12 Pt Dp	ST-1234	1 1/16" 12 Pt Skt	H-110	8" Ext'n	RB-810	1/4"x3/16" opng	C-12	3/8" Cold	CW-4	Chain Wrench
BU-1212	3/8" 12 Pt Uni	ST-1236	1 1/8" 12 Pt Skt	H-115	15 1/2" Ext'n	RB-1214	3/8"x3/16" opng	C-16	1/2" Cold		
BU-1214	7/16" 12 Pt Uni	ST-1238	1 1/16" 12 Pt Skt	H-1230	1 1/16" 12 Pt Skt	RB-1618	1 1/2"x3/16" opng	C-20	5/8" Cold		
BU-1216	1/2" 12 Pt Uni	ST-1240	1 1/4" 12 Pt Skt	H-1231	1 3/32" 12 Pt Skt	RB-2022	5/8"x1 1/8" opng	C-24	3/4" Cold		
BU-1218	9/16" 12 Pt Uni	ST-1242	1 1/16" 12 Pt Skt	H-1232	1" 12 Pt Skt	RB-2024	5/8"x3/4" opng	C-28	7/8" Cold		
BU-1220	5/8" 12 Pt Uni	SD-616	1/2" 6 Pt Dp	H-1234	1 1/16" 12 Pt Skt	RB-2428	3/4"x7/8" opng				
BU-1222	1 1/16" 12 Pt Uni	SD-618	9/16" 6 Pt Dp	H-1236	1 1/8" 12 Pt Skt						
BU-1224	3/4" 12 Pt Uni	SD-620	5/8" 6 Pt Dp								
		SD-622	1 1/16" 6 Pt Dp								



HEAVY MACHINERY INSTALLATION and MAINTENANCE SET

with Mobile Tool Crib

SET No. WSC-6A

184 Tools in Mobile Tool Crib
TC-104C Platform

Plus TC-101 and TC-102 Cabinets

Total Weight, 626 lbs.

SET No. WSC-6AT

184 Tools Only

Total Weight, 327 lbs.

16 3/4" Drive Parts and Sockets

15 1" Drive Parts and Sockets

5 Adjustable, 16 Combination Wrenches

5 Open-End, 13 Structural Wrenches

13 Screwdrivers, 5 Pliers, 21 Chisels

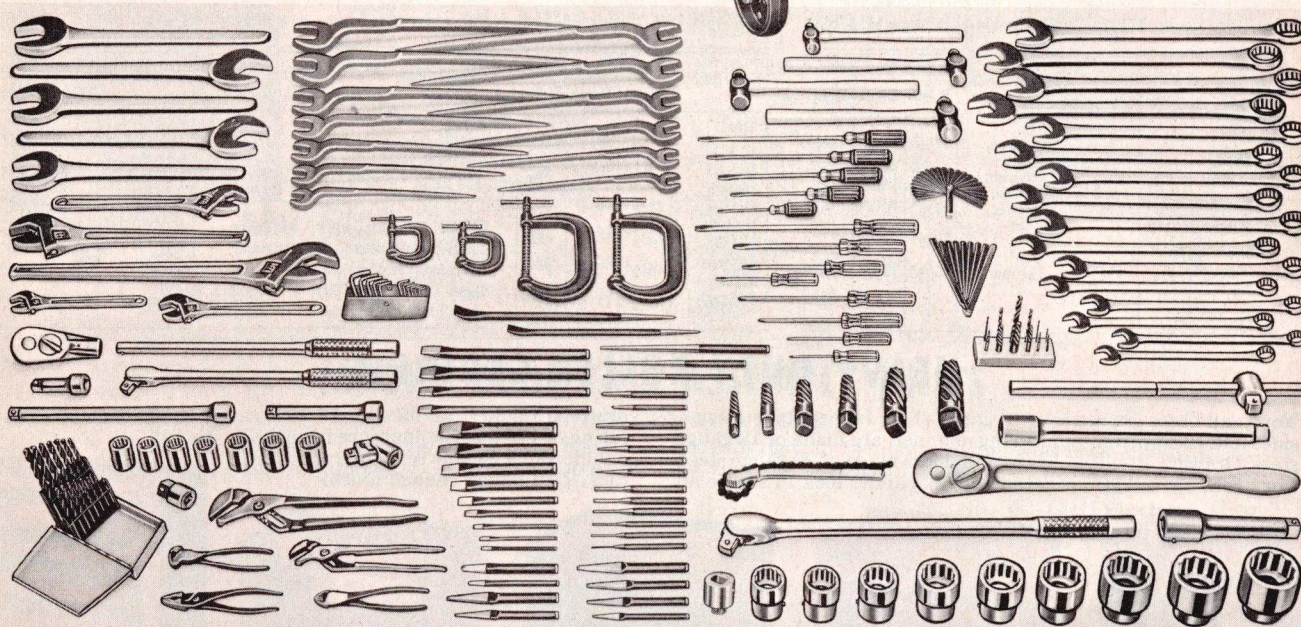
2 Pinch Bars, 16 Punches, 4 Hammers

52 Miscellaneous Tools



Especially designed for heavy installation, maintenance and repair work encountered in heavy industry and contracting fields. Range of socket and wrench openings from 7/8" thru 2 1/16" services all heavy series nuts and bolts from 1/2" to 1 1/2" diameter as well as most regular and finished series within this range. Styles of wrenches, adjustable, combination, open-end and structural are those proven most essential in this kind of work. Comprehensive selection of additional items assures having the right tool on the job at all times.

2
ALLOY
SOCKETS
AND
SETS



Add to this splendid array of tools the convenience of Williams Mobile Tool Crib and you have a ready-set-go department that brings a well supplied tool crib right to the job. Lost time going back and forth for missing or forgotten tools can be entirely eliminated.

TC-102 Cabinet has six drawers, TC-101 Cabinet has three drawers and large storage compartment so that tools can be conveniently segregated. There is plenty of extra space for special equipment and tools which a plant or contractor may wish to add for special requirements.

One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description	One Ea.	Description
3/4" DRIVE		1" DRIVE		COMBINATION WRS		PLIERS		CHISELS		PUNCHES	
H-A1	20" Handle	X-1260	1 7/8" 12 Pt Skt	1188	1 7/8"x1 7/8" opng	PL-370	7" Slip Jt	C-36	1 1/8" Cold	P-28	1 1/2" Taper
H-41A	Flex Handle	X-1264	2" 12 Pt Skt	1190	2"x2" opng	PL-1520	10" Super Jt	C-40	3/16" Cape	P-40	5" Center
H-51A	Ratchet Hd	X-1270	2 3/16" 12 Pt Skt	OPEN END WRENCHES		PL-1522C	14" Super Jt	C-42	3/4" Cape	P-42	6" Center
H-104	4" Ext'n	X-1272	2 1/4" 12 Pt Skt	1012A	2 1/16" opng	SCREWDRIVERS		C-44	5/16" Cape	BALL PEIN HAMMERS	
H-110	8" Ext'n	X-1276	2 3/8" 12 Pt Skt	1013	2 3/16" opng	DS-4	4" Sq Blade	C-46	3/8" Cape	HBP-0	1 Pound
H-115	15 1/2" Ext'n	ADJUSTABLE WRS		1013A	2 1/4" opng	DS-6	6" Sq Blade	C-60	3/4" Diamond	HBP-2	1 1/2" Pound
H-NX-130	3/4"x1" Adapter	AP-10	10" Adj Wr	1014	2 3/8" opng	DS-8	8" Sq Blade	C-62	7/8" Diamond	HBP-4	2 Pound
H-NX-131	1"x3/4" Adapter	AP-12	12" Adj Wr	1014A	2 3/16" opng	DS-12	12" Sq Blade	C-74	3/4" Rd Nose	HBP-6	2 1/2" Pound
H-140A	Universal Jt	AP-15	15" Adj Wr	STRUCTURAL WRS		DRG-24	4" Rd Blade	C-120	3/8" Rd	MISC. TOOLS	
H-1228	3/8" 12 Pt Skt	AP-18	18" Adj Wr	1905	3/8" opng	DRG-26	6" Rd Blade	C-124	3/4" long	WS-44A	13 Hex Wrs
H-1230	3/16" 12 Pt Skt	AP-24	24" Adj Wr	1906B	1" opng	DRG-30	10" Rd Blade	C-132	1" long	TDS-15	15 H. S. Drills
H-1232	1" 12 Pt Skt	COMBINATION WRS		1907	1 1/16" opng	DRG-32	12" Rd Blade	C-422	12" Rvt Bust	C-80	14" Pinch Bar
H-1234	1 1/16" 12 Pt Skt	1167	3/8"x3/8" opng	1907A	1 1/8" opng	CHISELS		P-3	3/32" Pin	C-82	16" Pinch Bar
H-1236	1 1/8" 12 Pt Skt	1168	1 1/16"x1 1/16" opng	1908	1 1/4" opng	DP-1	Phillips No. 1	P-4	3/8" Pin	EXS-221	Extractor Set
H-1238	1 3/16" 12 Pt Skt	1170	1 1/4"x1" opng	1908A	1 3/16" opng	DP-2	Phillips No. 2	P-5	3/16" Pin	EX-7	1/2" Extractor
H-1240	1 1/4" 12 Pt Skt	1171	1 1/8"x1 1/8" opng	1909	1 1/2" opng	DP-3	Phillips No. 3	P-6	3/16" Pin	EX-8	3/4" Extractor
X-20B	20" Handle	1172	1 1/8"x1 1/8" opng	1909A	1 3/8" opng	DP-4	Phillips No. 4	P-8	3/4" Pin	EX-9	1" Extractor
X-20C	Adapter-X-20B	1173	1 1/4"x1 1/4" opng	1910	1 3/4" opng	CHISELS		P-10	3/16" Pin	EX-10	1 1/4" Extractor
X-41	Flex Handle	1174	1 1/8"x1 1/8" opng	1910A	1 1/4" opng	C-8	1/4" Cold	P-13	3/32" Solid	EX-11	1 1/2" Extractor
X-51	Ratchet	1176A	1 3/8"x1 3/8" opng	1911	1 1/4" opng	C-10	3/8" Cold	P-14	3/16" Solid	EX-12	2" Extractor
X-110	9" Ext'n	1176	1 3/8"x1 1/8" opng	1911A	1 1/8" opng	C-12	3/8" Cold	P-15	3/32" Solid	(2)CC-402	2" C-Clamp
X-115	18" Ext'n	1178	1 1/2"x1 1/2" opng	1912	2" opng	C-16	1/2" Cold	P-16	3/16" Solid	(2)CC-406	6" C-Clamp
X-1246	1 1/16" 12 Pt Skt	1180	1 3/8"x1 3/8" opng	PLIERS		C-20	3/8" Cold	P-17	3/4" Solid	GS-1	Master Gauge
X-1248	1 1/8" 12 Pt Skt	1182	1 1/16"x1 1/16" opng	PL-57	7" Diag Cut	C-24	3/4" Cold	P-25	3/32" Taper	GS-4	Piston Gauge
X-1252	1 3/8" 12 Pt Skt	1184	1 3/4"x1 3/4" opng	PL-167	7" End Nip	C-28	1" Cold	P-26	3/16" Taper	CW-4	Chain Wrench
X-1258	1 3/16" 12 Pt Skt	1186	1 1/16"x1 1/16" opng								

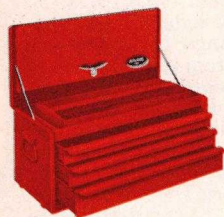


HEAVY DUTY METAL CHESTS

Williams heavy duty chests are designed and manufactured to meet industrial requirements. Extra reinforcing at all critical points assures years of trouble free service under heavy loads. Extreme rigidity and heavy duty locking systems offer maxi-

mum security against pilferage. Covers, doors, sides, bottoms, backs, drawers and dividers are made of 20 gauge steel. Corner reinforcements made of 18 gauge steel, skid rails of 22 gauge steel. Finished in red baked-on enamel.

2 ALLOY SOCKETS AND SETS



No. TB-1001
3 Drawer Metal Chest

Total Weight, 36 lbs.

Overall Dimensions
22 $\frac{1}{8}$ " wide, 10 $\frac{1}{8}$ " deep, 10" high

Description	Inside Dimensions		
	Width	Depth	Hght.
1 Top Drawer	20 $\frac{1}{8}$ "	8 $\frac{3}{4}$ "	1 $\frac{3}{8}$ "
1 Middle Drawer	20 $\frac{1}{4}$ "	8 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "
1 Bottom Drawer	20 $\frac{1}{4}$ "	8 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "
1 Tote Tray	18 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2"
1 Top Compartment	20 $\frac{1}{4}$ "	9 $\frac{3}{8}$ "	2 $\frac{3}{8}$ "
.....
.....



No. TB-2001
6 Drawer Metal Chest

Total Weight, 66 lbs.

Overall Dimensions
25 $\frac{1}{8}$ " wide, 12 $\frac{1}{8}$ " deep, 14 $\frac{1}{2}$ " high

Description	Inside Dimensions		
	Width	Depth	Hght.
3 Top Drawers	7 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
2 Middle Drawers	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Bottom Drawer	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "
1 Tote Tray	18 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2"
1 Top Compartment	25 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	4 $\frac{1}{8}$ "
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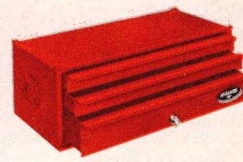


No. TB-2002
7 Drawer Metal Chest

Total Weight, 66 lbs.

Overall Dimensions
25 $\frac{1}{8}$ " wide, 12 $\frac{1}{8}$ " deep, 14 $\frac{1}{2}$ " high

Description	Inside Dimensions		
	Width	Depth	Hght.
4 Top Drawers	7 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Top Center Drawer	7 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
1 Middle Drawer	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Bottom Drawer	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "
1 Tote Tray	18 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2"
1 Top Compartment	25 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	4 $\frac{1}{8}$ "
.....
.....



No. TB-3001
3 Drawer Intermediate Chest

Total Weight, 29.8 lbs.

Overall Dimensions
26" wide, 12 $\frac{1}{8}$ " deep, 8 $\frac{5}{8}$ " high

Description	Inside Dimensions		
	Width	Depth	Hght.
2 Top Drawers	23 $\frac{3}{4}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Bottom Drawer	23 $\frac{3}{4}$ "	10 $\frac{1}{2}$ "	3 $\frac{1}{8}$ "
While adding only 8 $\frac{3}{4}$ " to height, this chest substantially increases storage space when used under TB-2001, TB-2002 and TB-4001 chests.			



No. TB-4001
11 Drawer Metal Chest

Total Weight, 89 lbs.

Overall Dimensions
25 $\frac{1}{8}$ " wide, 12 $\frac{1}{8}$ " deep, 18 $\frac{1}{8}$ " high

Description	Inside Dimensions		
	Width	Depth	Hght.
7 Top Drawers	7 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Top Center Drawer	7 $\frac{1}{8}$ "	10 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
2 Middle Drawers	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Bottom Drawer	23 $\frac{5}{8}$ "	10 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "
1 Tote Tray	18 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2"
1 Top Compartment	25 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	4 $\frac{1}{8}$ "
.....
.....

HEAVY DUTY ROLLER CABINETS

Tops and bases are made of 16 gauge steel. Horizontal stiffener, sides and two bottom reinforcing channels are made of 18 gauge steel. Drawers, dividers, backs and doors made of 20 gauge steel. Lock rod, $\frac{1}{8}$ " x $1\frac{1}{8}$ ", is actuated by cylinder lock to secure all

drawers. Each 4" diameter x 1" wide caster has a load capacity rating of 125 lbs. Cabinets are furnished with pull handle and a 24 hole screwdriver or tool rack. Red baked enamel finish.



No. TC-101C
3 Drawer Roller Cabinet With Casters

Total Weight, 102 lbs.

No. TC-101
3 Drawer Roller Cabinet Without Casters
Total Weight, 96 lbs.
Overall Dimensions
26 $\frac{3}{8}$ " wide, 18" deep,
31 $\frac{1}{8}$ " high with casters
27" high without casters

Description	Inside Dimensions		
	Width	Depth	Hght.
3 Top Drawers	21 $\frac{1}{4}$ "	17"	3 $\frac{3}{4}$ "
Bottom Compartment	26"	17"	9 $\frac{1}{2}$ "



No. TC-102C
6 Drawer Roller Cabinet With Casters

Total Weight, 127 lbs.

No. TC-102
6 Drawer Roller Cabinet Without Casters
Total Weight, 121 lbs.
Overall Dimensions
26 $\frac{3}{8}$ " wide, 18" deep,
31 $\frac{1}{8}$ " high with casters,
27" high without casters

Description	Inside Dimensions		
	Width	Depth	Hght.
4 Top Drawers	21 $\frac{1}{4}$ "	17"	2 $\frac{3}{4}$ "
2 Bottom Drawers	21 $\frac{1}{4}$ "	17"	4 $\frac{7}{8}$ "



No. TC-105C
5 Drawer Roller Cabinet With Casters

Total Weight, 127 lbs.

No. TC-105
5 Drawer Roller Cabinet Without Casters
Total Weight, 121 lbs.
Overall Dimensions
26 $\frac{3}{8}$ " wide, 18" deep,
31 $\frac{1}{8}$ " high with casters,
27" high without casters

Description	Inside Dimensions		
	Width	Depth	Hght.
4 Top Drawers	21 $\frac{1}{4}$ "	17"	2 $\frac{3}{4}$ "
1 Bottom Drawer	21 $\frac{1}{4}$ "	17"	10 $\frac{3}{8}$ "



No. TC-103C
Open Roller Stand With Casters

Total Weight, 68 lbs.

No. TC-103
Open Roller Stand Without Casters
Total Weight, 62 lbs.

Overall Dimensions
26 $\frac{3}{8}$ " wide, 18" deep,
31 $\frac{1}{8}$ " high with casters,
27" high without casters

Space is divided equally by middle shelf.
Well constructed, has hundreds of uses.



No. TC-201C
11 Drawer Roller Cabinet With Casters

Total Weight, 203 lbs.

Overall Dimensions
26 $\frac{3}{8}$ " wide, 18" deep,
40 $\frac{1}{4}$ " high with casters,
35 $\frac{1}{8}$ " high without casters

Description	Inside Dimensions		
	Width	Depth	Hght.
4 Small Drawers	6 $\frac{3}{8}$ "	16 $\frac{3}{8}$ "	1 $\frac{7}{8}$ "
1 Center Drawer	6 $\frac{3}{8}$ "	16 $\frac{3}{8}$ "	3 $\frac{7}{8}$ "
1 Wide Top Drawer	21 $\frac{1}{4}$ "	16 $\frac{3}{8}$ "	1 $\frac{7}{8}$ "
1 Work Shelf	21 $\frac{1}{2}$ "	16 $\frac{1}{2}$"	.....
4 Lower Drawers	21 $\frac{1}{4}$ "	17"	2 $\frac{3}{4}$ "
1 Bottom Drawer	21 $\frac{1}{4}$ "	17"	10 $\frac{3}{8}$ "



EXTRA HEAVY DUTY METAL CHESTS and ROLLER CABINETS

CHESTS

Extra heavy construction and reinforcement throughout. Covers, doors, sides, bottoms, backs, drawers and dividers are made of 20 gauge steel, corner reinforcements of 18 gauge steel, skid rails of 22 gauge steel. Two bottom drawers have dual loadm plated runners for ease of operation under heavy loads.

TB-5001



TC-501C

Description	Inside Dimensions		
	Width	Depth	Height

No. TB-5001

7 Drawer Metal Chest

Total Weight, 118 lbs.

Overall, 31" wide, 16 $\frac{1}{4}$ " deep, 18 $\frac{1}{2}$ " high

3 Top Drawers	8 $\frac{7}{8}$ "	14 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
2 Middle Drawers	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Middle Drawer	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
1 Bottom Drawer	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
Top Compartment	30 $\frac{3}{4}$ "	15 $\frac{3}{8}$ "	3 $\frac{7}{8}$ "

No. TC-501C

6 Drawer Roller Cabinet

Total Weight, 209 lbs.

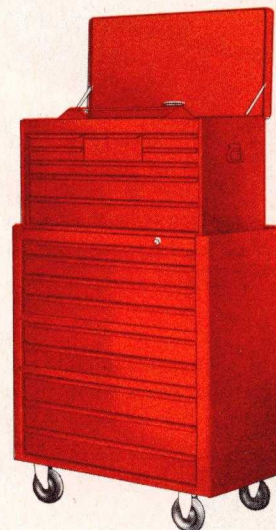
Overall, 34" wide, 19 $\frac{1}{8}$ " deep, 41 $\frac{1}{4}$ " high including casters

1 Top Drawer	29"	18"	1 $\frac{7}{8}$ "
3 Upper Middle Drawers	29"	18"	2 $\frac{5}{8}$ "
2 Lower Middle Drawers	29"	18"	3"
Bottom Compartment	33 $\frac{3}{4}$ "	18"	12 $\frac{1}{4}$ "

ROLLER CABINETS

Tops and bases made of 16 gauge steel. Horizontal stiffeners, sides, backs and five bottom reinforcing channels are made of 18 gauge steel. Drawers, dividers and doors, 20 gauge steel. Composition caster wheels, 5" diameter x 1" wide, each have a load capacity rating of 175 lbs. Drawers, 3 $\frac{3}{4}$ " high, have dual runners.

TB-5002



TC-502C

Description	Inside Dimensions		
	Width	Depth	Height

No. TB-5002

8 Drawer Metal Chest

Total Weight, 118 lbs.

Overall, 31" wide, 16 $\frac{1}{4}$ " deep, 18 $\frac{1}{2}$ " high

4 Top Drawers	8 $\frac{7}{8}$ "	14 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Top Center Drawer	8 $\frac{7}{8}$ "	14 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
1 Middle Drawer	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "
1 Middle Drawer	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
1 Bottom Drawer	28 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "
Top Compartment	30 $\frac{3}{4}$ "	15 $\frac{3}{8}$ "	3 $\frac{7}{8}$ "

No. TC-502C

9 Drawer Roller Cabinet

Total Weight, 235 lbs.

Overall, 34" wide, 19 $\frac{1}{8}$ " deep, 41 $\frac{1}{4}$ " high, including casters

1 Top Drawer	29"	18"	1 $\frac{7}{8}$ "
3 Upper Middle Drawers	29"	18"	2 $\frac{5}{8}$ "
2 Lower Middle Drawers	29"	18"	3"
3 Bottom Drawers	29"	18"	3 $\frac{3}{4}$ "

MOBILE TOOL CRIB ASSEMBLY UNITS

14 CABINET COMBINATIONS

Here is the answer to a wide variety of plant maintenance and installation problems . . . brings a complete

tool crib right to the job . . . eliminates back-and-forth lost time for "forgotten" tools.



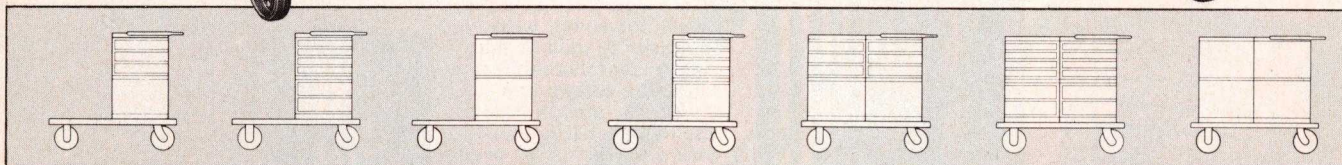
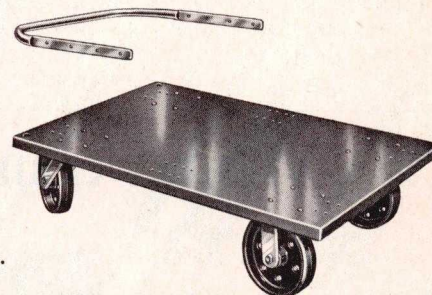
Typical assembly

Heavy steel platform pre-drilled to receive any one of 14 cabinet combinations.

Heavy duty construction features 12 gauge steel platform mounted on two swivel and two rigid 8" composition-tired casters equipped with ball bearings and lubrication fittings. Platform 27 $\frac{1}{4}$ " wide by 40 $\frac{3}{4}$ " long affords adequate clearance for pushing through swinging plant doors. Designed with push bar for hand transportation . . . cable holes in platform for towing . . . and ample clearance for lifting with fork truck.

Make your selection from combinations illustrated below.

No. TC-104C Platform Unit
Total Weight, 82.5 lbs.



For 3-drawer cabinet arrangement order TC-104C and TC-101.

For 6-drawer cabinet arrangement order TC-104C and TC-102.

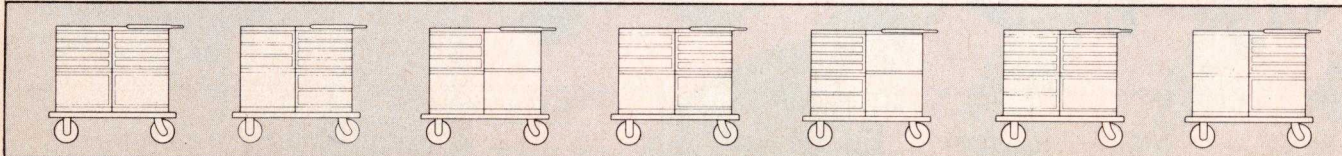
For open shelf stand arrangement order TC-104C and TC-103.

For 5-drawer cabinet arrangement order TC-104C and TC-105.

Order TC-104C and two TC-101 for this combination.

Order TC-104C and two TC-102 for this combination.

Order TC-104C and two TC-103 for this combination.



Order TC-104C and two TC-105 for this combination.

Order TC-104C plus TC-101 and TC-102 for this combination.

Order TC-104C plus TC-101 and TC-103 for this combination.

Order TC-104C plus TC-101 and TC-105 for this combination.

Order TC-104C plus TC-102 and TC-103 for this combination.

Order TC-104C plus TC-102 and TC-105 for this combination.

Order TC-104C plus TC-103 and TC-105 for this combination.



METAL TOOL BOXES

ALL WILLIAMS METAL TOOL BOXES
FEATURE FINEST QUALITY CONSTRUCTION

High grade sheet steel from 22 to 14 gauge is used in proportion to the size and use of the tool box. All are well reinforced and generously spot welded. Hardware is of finest quality. Baked-on enamel for durable finish.

2
ALLOY SOCKETS AND SETS



A

TB-8T has one full length partition toward front edge of bottom. This space is subdivided to accommodate various sizes and styles of $\frac{1}{2}$ " drive sockets.

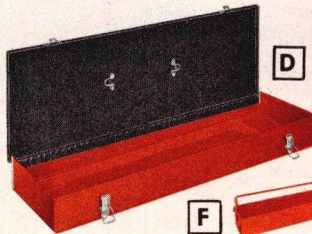
TB-9T has two full length partitions in bottom, spaced to accommodate large sockets such as in $\frac{3}{4}$ " drive.



C



B



D



E

F

G

Measurements in table and set numbers will aid in selecting metal tool boxes when custom-making sets or in finding the right size box for various sized assortments.

All Williams tool boxes are conveniently compartmented so that various types or classes of tools can be divided into handy groups. Each box offers years of trouble-free service.

Key	No.	Width	Depth	Height	Wgt.lbs.	Used for Sets Nos.
A	TB-8	23 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	9 $\frac{1}{4}$ "	10.5	WSS-7E
A	TB-8T	23 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	9 $\frac{1}{4}$ "	14.6	WSC-2A, WSC-101A, WSC-102, WSC-103, WSC-104A, WSC-105A, WSS-7G
A	TB-9T	23 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	9 $\frac{1}{4}$ "	14.6	WSC-3, WSC-5A, WSC-10C, WSC-11A, WSC-113, WSH-3A, WSH-4B
A	TBT-1	22 $\frac{3}{4}$ "	7"	1 $\frac{1}{16}$ "	4.1	Fits TB-8, TB-8T, TB-9T
B	TB-1A	9 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	.88	WSM-1A, WSM-30
B	TB-1B	9 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	1.1	WSM-3B
B	TB-2A	10"	2 $\frac{1}{16}$ "	1 $\frac{3}{8}$ "	1.3	WSB-1, WSB-14, WSB-16, WSB-20
B	TB-3A	9 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	1 $\frac{1}{4}$ "	1.1	WSM-2A, WSM-5A, WSM-6A, WSM-7B
B	TB-5	12 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	1.9	WSS-1A, WSS-2A, WSS-3A, WSS-25
B	TB-6	12 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	2.	WSS-4
B	TB-13	12 $\frac{1}{2}$ "	5"	1 $\frac{1}{4}$ "	2.1	WSC-112A, WSC-112B
B	TB-14	12 $\frac{3}{4}$ "	4 $\frac{1}{4}$ "	1 $\frac{3}{8}$ "	1.8	WSBP-1

Key	No.	Width	Depth	Height	Wgt.lbs.	Used for Sets Nos.
B	TB-16	8 $\frac{1}{2}$ "	5 $\frac{3}{8}$ "	2 $\frac{1}{2}$ "	1.9	TT-165
C	TB-4A	19 $\frac{1}{2}$ "	5 $\frac{7}{8}$ "	1 $\frac{3}{8}$ "	3.2	WSB-4, WSB-4A, WSM-8C
C	TB-15	18"	4 $\frac{1}{2}$ "	2"	3.	WSSP-1
C	TB-17	17 $\frac{3}{4}$ "	3"	2 $\frac{1}{16}$ "	2.6	WSS-9
D	TB-7	23"	7 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	6.4	WSB-5D, WSB-6D, WSB-21, WSC-1B, WSS-5, WSS-5A, WSS-6A, WSS-8, WSS-26
E	TB-10	20 $\frac{3}{4}$ "	5 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	8.3	WSH-1B, WSH-2A
E	TB-11	29 $\frac{1}{4}$ "	8"	4 $\frac{1}{4}$ "	14.9	WSX-1, WSX-3
E	TB-12	30 $\frac{1}{4}$ "	11 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	26.4	WSH-5, WSX-4A
F	TBT-3	7 $\frac{5}{8}$ "	3 $\frac{1}{4}$ -1 $\frac{1}{8}$ "	3 $\frac{1}{4}$ "	.25	WSB-8, WSB-9
F	TBT-4	7 $\frac{3}{8}$ "	3 $\frac{1}{4}$ -1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	.41	WSB-11, WSB-12
F	TBT-5	16 $\frac{3}{8}$ "	1-1 $\frac{1}{16}$ "	1 $\frac{1}{4}$ "	.75	WSS-14, WSS-16
F	TBT-6	12 $\frac{3}{16}$ "	1 $\frac{1}{16}$ -1 $\frac{5}{8}$ "	2 $\frac{1}{2}$ "	.84	WSS-17, WSS-18
G	TBT-2	18 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2"	3.	Fits TB-1001, TB-2001, TB-2002, TB-4001

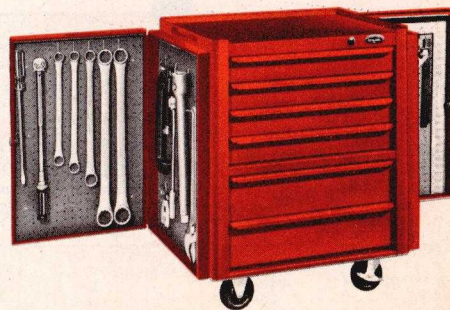
VERTICAL CABINETS FOR WALLS OR ROLLER CABINETS

Add convenient storage for tools longer than drawer width.



When mounted on rollaways or near machinery, these cabinets allow long tools and equipment to be more readily accessible plus secure storage.

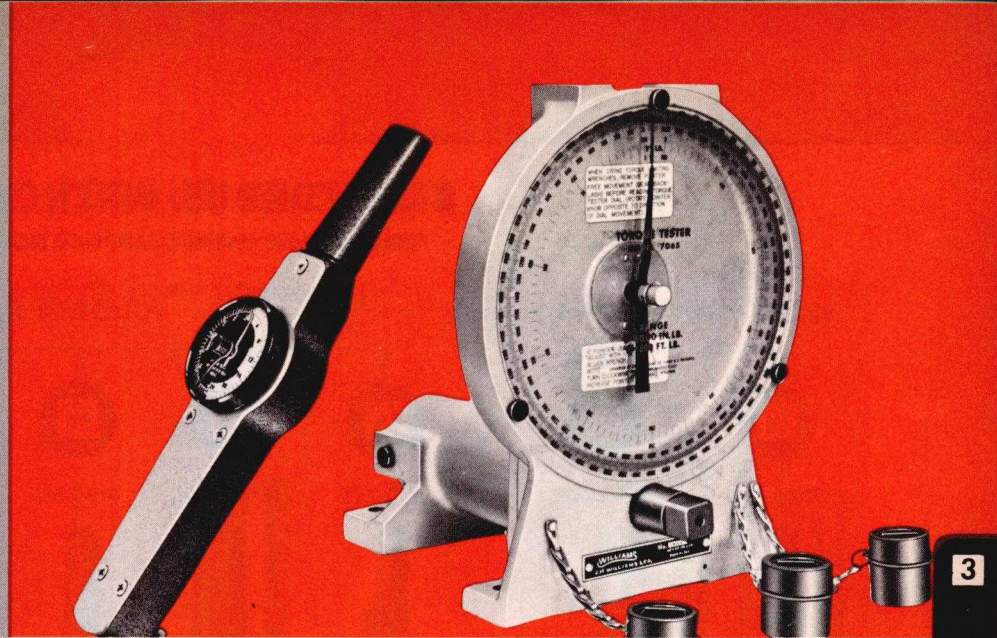
Two sizes, 26" or 35" high. These cabinets are designed to mount quickly and easily to walls or sides of any make roller cabinets. Mounting screws and instructions are included. Each cabinet is equipped with a supply of 30 peg-board tool hangers. Cylinder lock and welded full length piano hinge provide excellent security.



No.	Width	Depth	Height	Fits Roller Cabinet Nos.
TCP-100	17"	3 $\frac{3}{4}$ "	26"	TC-101C, TC-102C, TC-103C, TC-105C
TCP-500	17"	3 $\frac{3}{4}$ "	35"	TC-201C, TC-501C, TC-502C



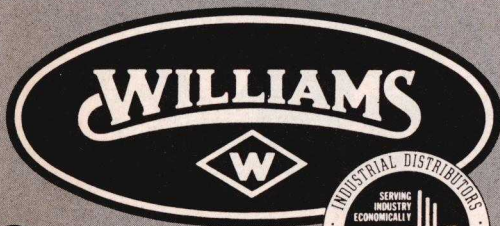
Avoid first over-tightening a fastener with a conventional wrench before applying torque wrench. Use the torque wrench for final tightening, to assure accurate torquing values.



Section 3 TORQUE TOOLS

FOR TECHNICAL INFORMATION ABOUT THESE PRODUCTS

Ask for Technical Bulletin TB-113A on torque limiting wrenches, TB-128 on dial torque wrenches, and TB-129 on torque wrench testers, for valuable technical features and application data on these products.



THIS IS
THE TEAM
THAT DELIVERS



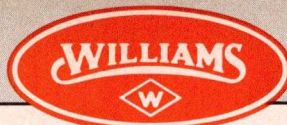
TOOLPOWER

WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE



3

TORQUE TOOLS



DIAL TORQUE WRENCHES

FOR U.S. and METRIC APPLICATIONS

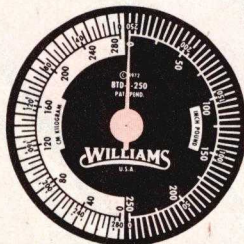
SINGLE POINTER STYLE

FOLLOWER NEEDLE STYLE



SEE WILLIAMS TECHNICAL BULLETIN TB-128 FOR COMPLETE OPERATIONAL DETAILS.

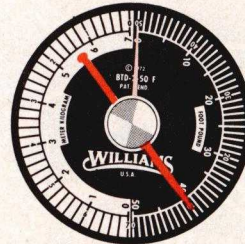
COMBINATION U.S./METRIC DIALS IN SINGLE POINTER and FOLLOWER NEEDLE STYLES



SINGLE POINTER COMBINATION
DIAL SET FOR U.S. READINGS.



SINGLE POINTER COMBINATION
DIAL SET FOR METRIC READINGS.



FOLLOWER NEEDLE COMBINATION
DIAL SET FOR U.S. READINGS.

Williams offers a complete line of Dial Torque Wrenches to meet every industrial need. Single Pointer style indicates direct reading of torque value attained. Follower Needle style has additional "memory" needle which remains at the highest torque value attained for positive verification. When reading is no longer needed, the follower needle is reset to zero.

MILITARY DESCRIPTION: GGG-W-00686C, TYPE II, CLASS 1, STYLE A, B AND C

Most styles have unique combination dial faces which permit measurement of torque in either U.S. or Metric values—in either left or right hand direction. Rigidly constructed for long life, they are calibrated to meet the highest standards of industrial accuracy and safety requirements. Calibration certified and traceable to National Bureau of Standards.

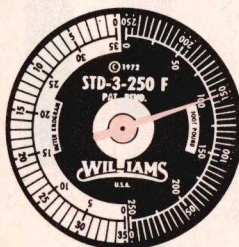
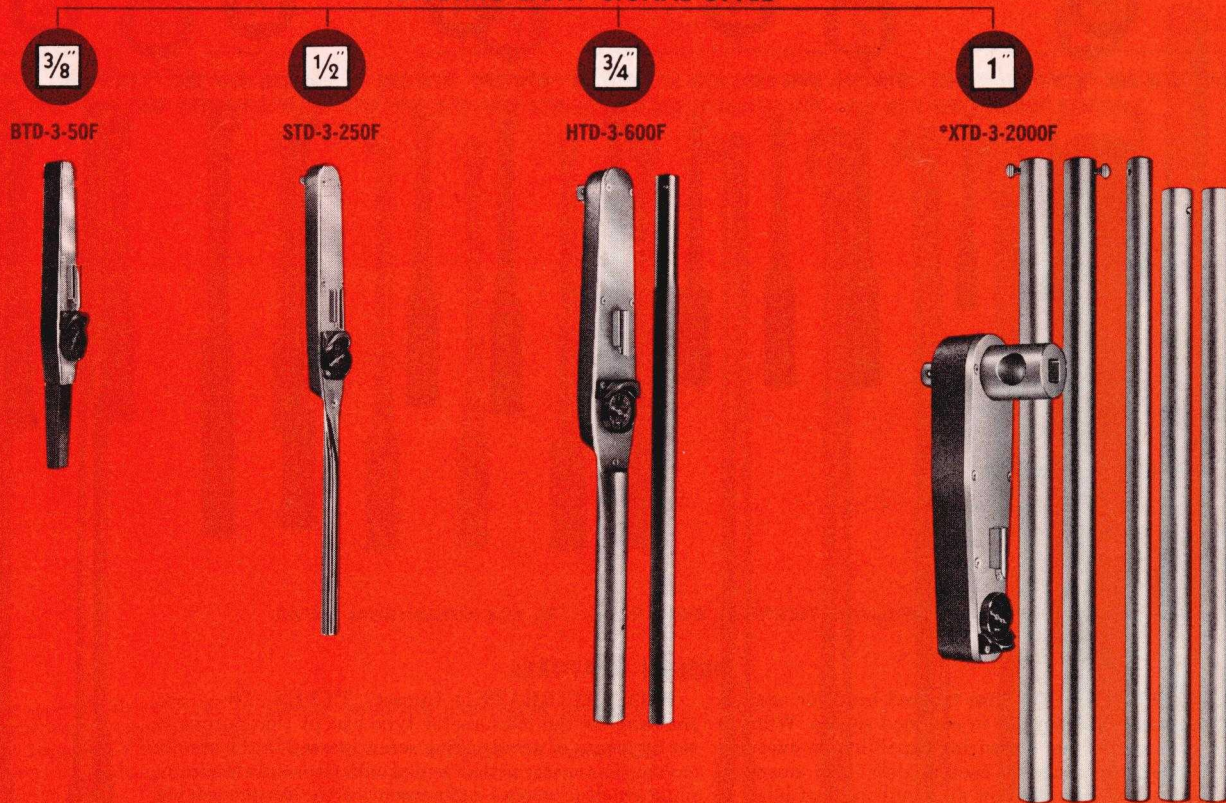
No.	Drive Size	U.S.		METRIC		Overall Length, Inches		Wgt. Each Lbs.
		Range	Increments	Range	Increments	Wrench Only	With Extension	
SINGLE POINTER STYLE								
BTD-1-250	3/8"	0-250 in lb	5 in lb	0-280 cm kg	5 cm kg	14-7/8	.....	2.0
STD-1-250F	1/2"	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
FOLLOWER NEEDLE STYLE								
MTD-2-75	1/4"	0-75 in lb	1 in lb	0-90 cm kg	2 cm kg	10	.....	1.75
BTD-2-250	3/8"	0-250 in lb	5 in lb	0-280 cm kg	5 cm kg	14-7/8	.....	2.0
BTD-2-50F	3/8"	0-50 ft lb	1 ft lb	0-7 m kg	0.2 m kg	14-7/8	.....	2.0
STD-2-250F	1/2"	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
HTD-2-350F	3/4"	0-350 ft lb	10 ft lb	.....	.....	27-3/4	.....	8.0
HTD-2-600F	3/4"	0-600 ft lb	10 ft lb	0-80 m kg	2 m kg	25-1/2	46-1/2	10.5



DIAL TORQUE WRENCHES

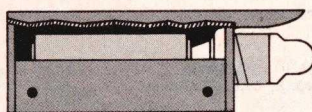
FOR U.S. and METRIC APPLICATIONS

ELECTRIC LIGHT SIGNAL STYLE



ELECTRIC LIGHT SIGNAL DIAL

When desired torque has been reached, electric signal shown below will flash on. Light goes off when pressure is released.



MILITARY DESCRIPTION:
GGG-W-00686C, TYPE II, CLASS 1 AND 2, STYLE A, B AND C

REVERSIBLE RATCHET ADAPTERS

Convert any Torque Wrench to a ratcheting action.



**B-55, 3/8" Drive
RATCHET ADAPTER**
41 Teeth, 2-1/8" long,
1-3/16" outside diam.
Weight, .31 lb.



**S-55A, 1/2" Drive
RATCHET ADAPTER**
41 Teeth, 2-5/8" long,
1-5/8" outside diam.
Weight, .66 lb.

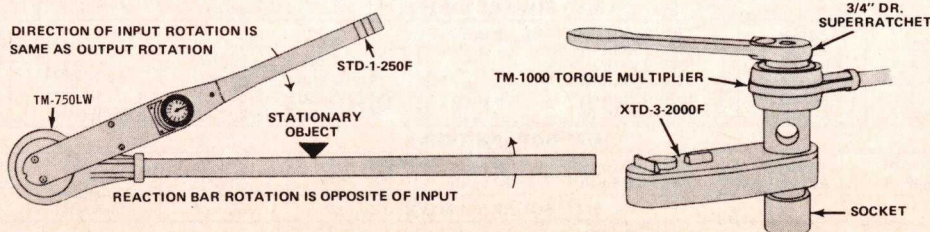


**H-55, 3/4" Drive
RATCHET ADAPTER**
41 Teeth, 3-7/8" long,
2-1/2" outside diam.
Weight, 3.0 lbs.

No.	Drive Size	U.S.		METRIC		Overall Length, Inches		Wgt. Each Lbs.
		Range	Increments	Range	Increments	Wrench Only	With Extensions	
ELECTRIC LIGHT SIGNAL STYLE								
BTD-3-50F	3/8	0-50 ft lb	1 ft lb	0-7 m kg	0.2 m kg	14-7/8	.....	2.0
STD-3-250F	1/2	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
HTD-3-600F	3/4	0-600 ft lb	10 ft lb	0-80 m kg	2 m kg	25-1/2	46-1/2	10.5
*XTD-3-2000F	1	0-2000 ft lb	50 ft lb	0-280 m kg	5 m kg	13-1/2	*120	21.0

*To be used with Torque Multiplier or with T-Handle assembly only. Use center bar and 2 handles for low torque values, and all 4 handles for torque values over 1000 ft lb.

DIAL TORQUE WRENCHES MAY BE USED WITH WILLIAMS TORQUE MULTIPLIERS

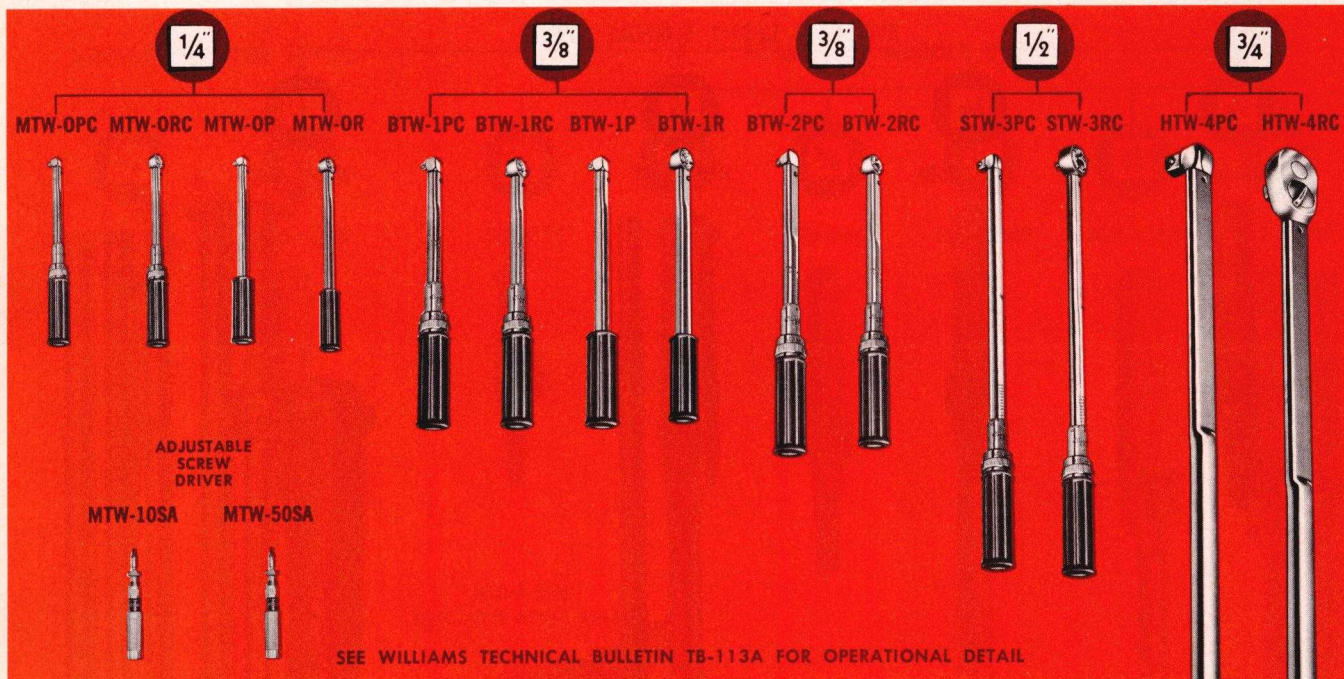


SEE PAGE 56 FOR TORQUE MULTIPLIER SPECIFICATIONS



TORQUE LIMITING WRENCHES

FOR U.S. and METRIC APPLICATIONS



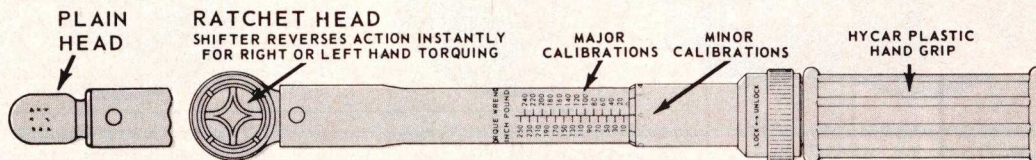
DESIGN FEATURES

VERSATILE DESIGN Slim tapered head for easy reach. Small and light for use in confined spaces. Wide right or left hand torque measuring capability in every tool (note the broad range for each model) often means that one torque wrench can now do a multitude of jobs. Many models have dual U.S./METRIC marking scales.

CALIBRATED TYPES Easy to operate. Merely turn the micrometer style handle to the desired setting and lock in place. The torque limiting device will momentarily release when the predetermined torque has been reached by feel impulse and with audible signal. By relaxing pull on handle, the torque wrench is then ready for another fastener.

NON-CALIBRATED (preset) TYPES These are the same as the micrometer type except that torque is set by means of an adjusting screw located in the handle cavity. The cavity is then sealed with a special aluminum plug which precludes adjustment of the torque setting without damaging the plug. Ideal for production line and quality control requirements.

RATCHETING and PLAIN TYPES Williams Superratchet mechanisms are made available in the 1/4, 3/8, 1/2 and 3/4 inch drive sizes. Handy when fasteners must be "run down" before final torquing. Plain styles are very useful for applying specified torque to an already seated fastener.



MILITARY DESCRIPTION: GGG-W-00686C-1, TYPE III, CLASS 1, 2, 3 AND 4

No.	Type Head	Setting	U.S.		METRIC		Length Inches	Wgt. Lbs.
			Range	Increments	Range	Increments		
1/4" SQUARE DRIVE								
MTW-10SA	Serdriver	Adjust.	4- 100 in oz	2 in oz	.....	.....	6-1/2	0.4
MTW-50SA	Serdriver	Adjust.	2- 30 in lb	1 in lb	.....	.....	6-1/2	0.4
MTW-OPC	Plain	Adjust.	30- 200 in lb	1 in lb	40.3- 236.2 cm kg	1.2 cm kg	9	0.6
MTW-ORC	Ratchet	Adjust.	30- 200 in lb	1 in lb	40.3- 236.2 cm kg	1.2 cm kg	9-1/2	0.7
MTW-OP	Plain	Pre-Set	30- 200 in lb	.....	40 - 236 cm kg	.....	7-1/2	0.6
MTW-OR	Ratchet	Pre-Set	30- 200 in lb	.....	40 - 236 cm kg	.....	9-1/2	0.7
3/8" SQUARE DRIVE								
BTW-1PC	Plain	Adjust.	30- 250 in lb	1 in lb	.....	.....	13	1.6
BTW-1RC	Ratchet	Adjust.	30- 250 in lb	1 in lb	.....	.....	13	1.6
BTW-1P	Plain	Pre-Set	30- 250 in lb	.....	40 - 288 cm kg	.....	13	1.4
BTW-1R	Ratchet	Pre-Set	30- 250 in lb	.....	40 - 288 cm kg	.....	13	1.4
BTW-2PC	Plain	Adjust.	150-1000 in lb	5 in lb	201.6-1180.8 cm kg	5.8 cm kg	14	2.1
BTW-2RC	Ratchet	Adjust.	150-1000 in lb	5 in lb	201.6-1180.8 cm kg	5.8 cm kg	15	2.3
1/2" SQUARE DRIVE								
STW-3PC	Plain	Adjust.	300-2500 in lb	10 in lb	.....	.....	20	2.3
STW-3RC	Ratchet	Adjust.	300-2500 in lb	10 in lb	.....	.....	21	2.8
3/4" SQUARE DRIVE								
HTW-4PC	Plain	Adjust.	1000-6000 in lb	25 in lb	.....	.....	40	9.5
HTW-4RC	Ratchet	Adjust.	1000-6000 in lb	25 in lb	.....	.....	40	10.0

TORQUE LIMITING WRENCHES

FOR U.S. and METRIC APPLICATIONS



3

TORQUE TOOLS

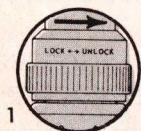
For overall description of torque wrenches illustrated above see information on opposite page.

The rugged XTW-5PCFA, 1" drive model is designed for utmost convenience in limiting torque in various ranges. Use the torque head-handle unit only, for values to 500 foot pounds. Use torque head with one handle extension, for values to 1000 foot pounds. Use both handle extensions together, for values to 2000 foot pounds.

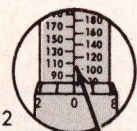
HELPFUL TORQUE HINTS

Always work with clean threads that are free of corrosion. For accurate work consult product manufacturer's recommendations for specific torque loading. Note particularly whether recommendations are for dry, oiled or plated threads. Avoid first over-tightening a nut or bolt with a conventional wrench before applying torque wrench. Final tightening should always be done with a torque wrench to arrive at accurate readings.

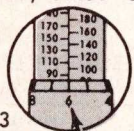
SIMPLE, FAST OPERATING PROCEDURE



1
UNLOCK by turning lock ring to the right.



2
ROTATE grip until MAJOR TORQUE VALUE shows here.



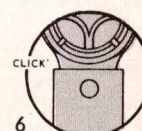
3
THEN ROTATE grip so MINOR TORQUE VALUE reading lines up with "zero" line.



4
LOCK torque setting by turning lock ring to the left.



5
SET ratchet shifter for desired direction.



6
An AUDIBLE snap-type signal indicates that selected torque has been reached.

No.	Type Head	Setting	U.S.		METRIC			Length Inches	Wgt. Lbs.
			Range	Increments	Range	Increments			
3/8" SQUARE DRIVE									
BTW-2PCF	Plain	Adjust.	15- 100 ft lb	1/2 ft lb	2.4- 14.2 m kg	.07 m kg		14	2.1
BTW-2RCF	Ratchet	Adjust.	15- 100 ft lb	1/2 ft lb	2.4- 14.2 m kg	.07 m kg		15	2.3
BTW-2PF	Plain	Pre-Set	15- 100 ft lb	.....	173 -1152 cm kg	.....		14	1.6
BTW-2RF	Ratchet	Pre-Set	15- 100 ft lb	.....	173 -1152 cm kg	.....		15	1.8
1/2" SQUARE DRIVE									
STW-3PCF	Plain	Adjust.	30- 250 ft lb	1 ft lb	4.8- 35.3 m kg	.14 m kg		20	2.3
STW-3RCF	Ratchet	Adjust.	30- 250 ft lb	1 ft lb	4.8- 35.3 m kg	.14 m kg		21	2.8
STW-3PF	Plain	Pre-Set	30- 250 ft lb	.....	4 - 35 m kg	.....		19-1/2	1.8
STW-3RF	Ratchet	Pre-Set	30- 250 ft lb	.....	4 - 35 m kg	.....		20	2.3
3/4" SQUARE DRIVE									
HTW-4PCF	Plain	Adjust.	100- 600 ft lb	2-1/2 ft lb	15.6- 84.7 m kg	.40 m kg		40	9.5
HTW-4RCF	Ratchet	Adjust.	100- 600 ft lb	2-1/2 ft lb	15.6- 84.7 m kg	.40 m kg		40	10.0
HTW-4PF	Plain	Pre-Set	100- 600 ft lb	.....	14 - 83 m kg	.....		38	7.9
HTW-4RF	Ratchet	Pre-Set	100- 600 ft lb	.....	14 - 83 m kg	.....		38	8.4
1" SQUARE DRIVE									
XTW-5PCFA	Plain	Adjust.	300-2000 ft lb	10 ft lb	48 - 270 m kg	1.4 m kg		*105	57.5

*Overall length fully assembled with both handles. Entire set comes complete in wooden box.



TORQUE WRENCH TESTERS

TORSION BAR STYLE

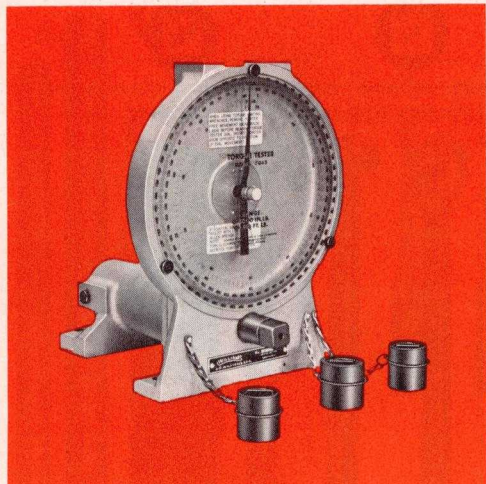


Figure No. 1

TORQUE TESTER—Checking Accuracy of Wrench

Attach torque wrench to tester input, using appropriate adapter. Apply a clockwise torque to the torque wrench, slowly increasing the torque until the desired value is reached. Compare the readings of the torque tool and the tester. Return pointer to zero, and repeat test. Compare, and make any necessary adjustments to the torque tool. See Tech Bulletin TB-129.

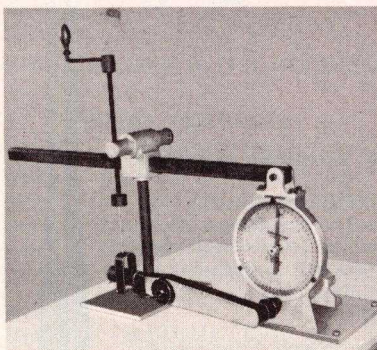


Figure No. 2

TORQUE TESTER with MECHANICAL LOADER

Mechanical Loader may be used on higher range torque testers to apply the pulling load on a torque wrench easily and evenly. It also facilitates viewing readings on torque tester while applying proper amount of torque. Turn crank counterclockwise to lift torque wrench until desired torque value is reached. Compare readings, retest.

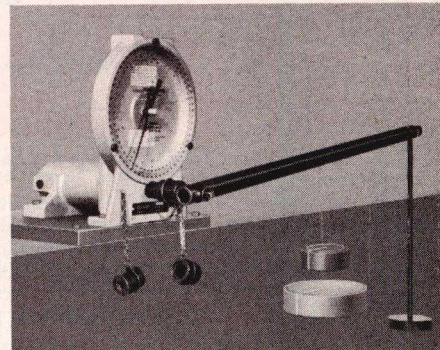


Figure No. 3

TORQUE TESTER with CALIBRATOR ASSEMBLY

Testers can be checked for continued accuracy by use of dead weight calibrators and weights noted in Test Reading Chart and steps describing procedure for checking tester calibration contained in Tech Bulletin TB-129. Weights are of commercial quality, cast iron held to a tolerance of plus or minus 15 grains on 20-pound weights, 13 grains on 5-pound weights.

U.S. ONLY			COMBINATION U.S./METRIC			Drive Size	Adapters Included		Wgt. Lbs.
No.	Range	Increments	No.	Range	Increments		Female	Male	
TORQUE WRENCH TESTERS-Figure No. 1									
TT-7085	0- 250 in lb 0-4000 in oz	1 in lb 5 in oz	TT-F7085	0- 290 cm kg 0- 250 in lb	1 cm kg 1 in lb	3/8 F.	1/4	3/8	10.5
TT-7075	0- 150 ft lb 0-1800 in lb	1 ft lb 2 in lb	TT-F7075	0-2000 cm kg 0-1800 in lb	5 cm kg 2 in lb	3/8 F.	1/4 1/2	3/8	10.5
TT-7065	0- 500 ft lb 0-6000 in lb	5 ft lb 10 in lb	TT-F7065	0- 70 m kg 0- 500 ft lb	1 m kg 5 ft lb	3/4 M.	3/4 x 3/4 3/4 x 1/2	...	12.0
TT-7045	0-1000 ft lb	10 ft lb	TT-F7045	0- 140 m kg 0-1000 ft lb	1 m kg 5 ft lb	1 M.	1 x 1 1 x 3/4	...	15.0
No.	Description								Wgt. Lbs.
MECHANICAL LOADER-Figure No. 2									
TT-7047	Use with any torque wrench. Overall Length, 48".....								10.0
CALIBRATOR ASSEMBLIES-Figure No. 3									
TT-7085631	Use with TT-7085 Torque Tester. Requires three 5 pound weights (not included).....								8.0
TT-7075631	Use with TT-7075 Torque Tester. Requires three 5 pound and two 20 pound weights (not included).....								11.0
TT-7065631	Use with TT-7065 Torque Tester. Requires three 5 pound and four 20 pound weights (not included).....								19.0
	Use with TT-7045 Torque Tester. Requires two 5 pound and nine 20 pound weights (not included).....								.....
WEIGHTS-Figure No. 3									
TT-73630-5	5 pound weight for use with Calibrator Assemblies listed in above table.....								5.0
TT-73630-20	20 pound weight for use with Calibrator Assemblies listed in above table.....								20.0



TORQUE MEASURENRENCH®

DEFLECTING BEAM—CONVERGING SCALE TYPE



S-57

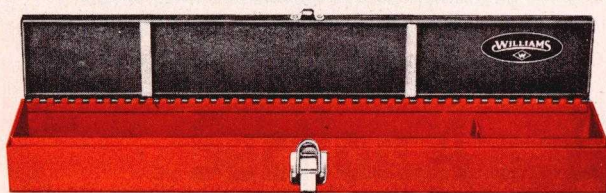


B-58

RATCHETING STYLE



S-57



Complete in Metal Case, 20 x 3 x 2-1/8

No. S-57 1/2" SQUARE DRIVE REVERSIBLE RATCHET WITH RIGHT HAND TORQUE INDICATING SOUND SIGNAL

Total Weight, 5.9 lbs.

Williams Ratchet Torque Measurrench® may be used in two ways, as follows:—

By Sight Reading—An easily read scale on the handle indicates applied tightening pressures from 20 to 200 foot-pounds.

By Sound Reading—A sharp sound signal is given for any desired torque from 35 to 200 foot-pounds, by setting the simple sound device.

Simple in design and sturdy in construction, the reversible ratchet mechanism is a highly desirable feature. The 36-tooth ratchet wheel, with twin double-tooth, oscillating pawl provides constant engagement with TWO teeth of ratchet-gear in both ON and OFF rotation of nuts.

It makes possible the unusually short operating swing of only 1/30 of a full turn; obstruction hazards are reduced to the minimum. The wrench action is instantly reversed by a mere flip of the shifter, which is flush with the head.

The well balanced drop-forged handle, with specially designed grip, is 19-1/2" long for ample leverage; the head is exceptionally compact and free from protrusions, for easy use in close places.

Every part is made of selected alloy and high tensile steel, accurately machined and heat-treated. Chrome-plated, with entire top and sides of head and calibrated bar buffed; handle, "satin" chrome. Packed in individual metal case. Operating instructions are supplied with each wrench.

No.	Range	Increments	Length	Wgt., Each
S-57	20-200 ft lb	5 ft lb	19-1/2	3.7

NON-RATCHETING STYLE



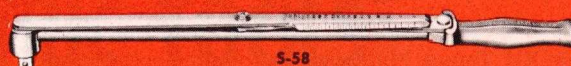
B-58A



B-58



S-58A



S-58

NON-RATCHETING FOR MEASURING RIGHT AND LEFT HAND TORQUE BY SIGHT READING

This series of torque wrenches employs the time-proven converging scale method of torque reading developed and patented by Williams.

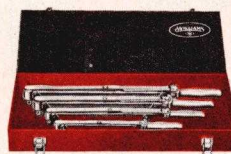
Ordinary accidents such as dropping will not destroy the accuracy of the Torque Measurrench®.

Calibrations are machine cut to insure long life, accuracy and easy reading of the indicated torque.

Their streamlined appearance is indicative of the light weight and proportional balance used in the design of these wrenches.

Selected alloy steel is accurately machined and heat-treated. Chrome-plated finish with calibrated areas buffed. Operating instructions are supplied with each individually boxed wrench.

No.	Range	Increments	Length	Wgt., Each
3/8" SQUARE DRIVE				
B-58A	0-150 in lb	5 in lb	12-1/4	.94
B-58	0-600 in lb	25 in lb	15-1/2	1.2
1/2" SQUARE DRIVE				
S-58A	0-100 ft lb	5 ft lb	18	2.6
S-58	0-200 ft lb	5 ft lb	19-7/8	3.2



SET No. T4-58

One each Torque Wrenches
As Listed Below

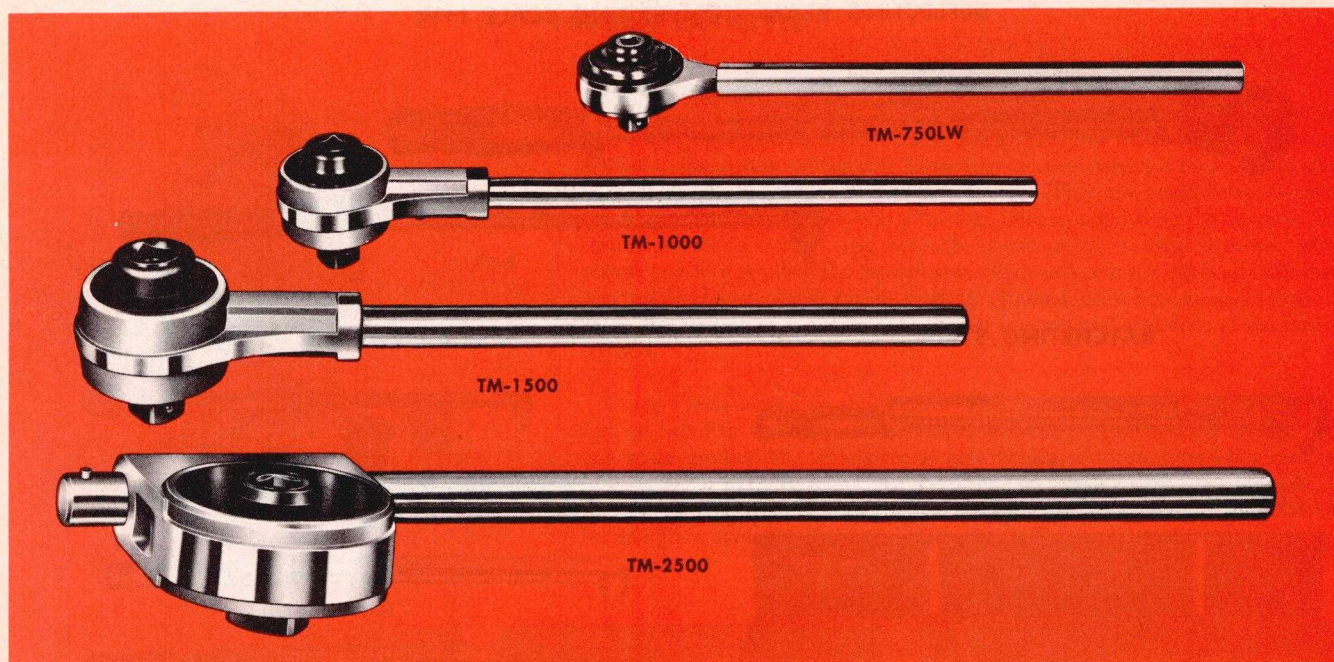
Complete in Metal Box
20-7/8" x 8-1/2" x 2-1/2"
Total Weight, 15 lbs.

No.	Range	Increments	Length	Wgt., Each
3/8" SQUARE DRIVE				
B-58A	0-150 in lb	5 in lb	12-1/4	.94
B-58	0-600 in lb	25 in lb	15-1/2	1.2
1/2" SQUARE DRIVE				
S-58A	0-100 ft lb	5 ft lb	18	2.6
S-58	0-200 ft lb	5 ft lb	19-7/8	3.2



X-4 TORQUE MULTIPLIERS

3

TORQUE
TOOLS

Williams X-4 Torque Multipliers provide the operator with nut-turning power that requires only one fourth the force required when using conventional tools. Williams X-4's multiply the force applied by the operator four times or more depending on the characteristics of the model in use.

Input and output rotation is in the same direction. Rotation of the reaction bar is in the opposite direction. Reaction bar, therefore, must rest securely against an object sturdy enough to withstand the force that will be generated. All reaction bars

are securely locked with heads.

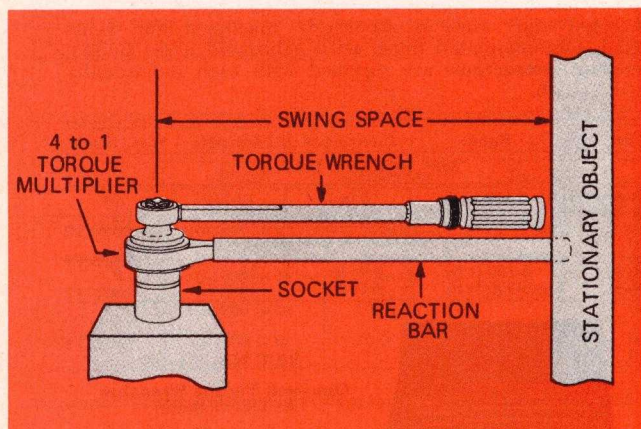
By removing four screws, heads may be disassembled for inspection, cleaning and lubrication.

X-4's can be driven with ratchets or torque wrenches may be used with sufficient accuracy for most applications.

Two Williams X-4 Torque Multipliers may be used in combination to provide multiple ratios where extreme turning power is required. For example, TM-750LW may be engaged with TM-1000 to provide an output ratio of 16 to 1.

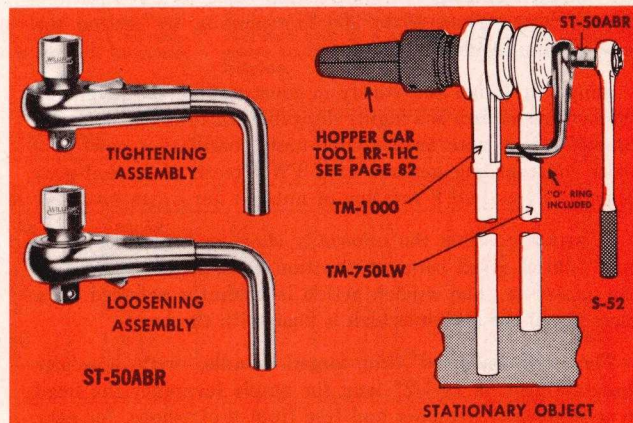
No.	Max. Output Foot Pounds	Output Ratio	Max. Input Foot Pounds	Input Female Sq.	Output Male Sq.	Head Thickness Including Tang	Head Diam.	Overall Length Incl. Reaction Bar	Weight Lbs.
TM-750LW	1,000	4 to 1	250	1/2	3/4	3-3/8	3-1/2	22-1/2	5.5
TM-1000	2,000	4 to 1	500	3/4	1	4-3/8	3-3/4	25-1/2	14.
TM-1500	4,000	4.33 to 1	924	1	1-1/2	6-3/16	5-1/4	29-3/4	35.
TM-2500	12,000	6 to 1	2,000	1	2-1/2	7	8	40-1/2	100.

A TYPICAL TORQUE MULTIPLIER SETUP



In use, a standard socket of appropriate size is placed on the male square drive tang. A suitable ratchet or ratcheting torque wrench is inserted in the female square drive input of the torque multiplier. With this assembly placed on the fastener to be turned, it must be remembered that the input and output rotation will be in the same direction. Rotation of the reaction bar will be in the opposite direction. The reaction bar, therefore, must rest securely against an object sturdy enough to withstand the force that will be generated.

ANTI-BACKLASH TOOL



Revolutionary new tool solves the "wind-up" problem usually experienced when using Torque multipliers in tandem. As torque builds up, an ever increasing swing arc becomes necessary to continue the turning process. The ST-50 ABR acts as a storage dog to absorb this effect and allow instant turning, without unwinding the set up each time. Since constant pressure is being held, the set up maintains rigidity so that only a short swing arc is required to complete the turning process swiftly and securely.

No.	Description	Wgt.-Lbs.
ST-50ABR	Anti-Backlash Tool, 1/2 Drive M. & F.	1.4



Don't attempt to turn metric fasteners with nearly equivalent U. S. standard wrenches. Damage to the fastener could result, and cause dangerous slippage in subsequent use. Make sure you have the proper metric size.

**FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS**

Ask for Technical Bulletin TB-124 on Williams Metric Supersockets, Superrenches and Torque Wrenches. Contains much helpful information including chart on metric bolts and nuts related to nominal wrench openings.



Section 4 METRIC TOOLS



THIS IS
THE TEAM
THAT DELIVERS

TOOLPOWER

WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE



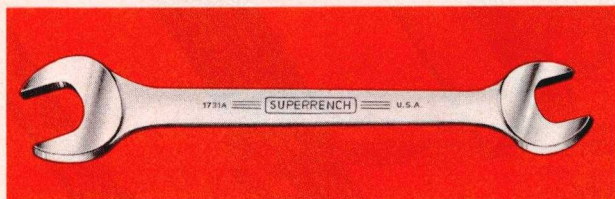
4

M E T R I C
T O O L S



METRIC OPEN-END SUPERRENCH®

SELECTED ALLOY STEEL
DOUBLE HEAD—15° ANGLE



Jaws are long, thin and pointed. Drop-forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, faces polished. Highly efficient where clearance is limited.

Example of Order Nomenclature: "M-1025 WRENCH"

No.	Nominal Openings mm	Small Head		Large Head		Overall Length	Wgt. Each Lbs.
		Width	Thick.	Width	Thick.		
M-1020	6 & 7	1/2	5/32	39/64	5/32	3-13/16	.03
M-1020T	8 & 9	39/64	3/16	23/32	3/16	4- 1/4	.05
M-1021T	8 & 10	39/64	3/16	25/32	3/16	4- 1/4	.05
M-1023T	9 & 11	47/64	13/64	53/64	13/64	4-11/16	.07
M-1023U	10 & 11	47/64	13/64	53/64	13/64	4-11/16	.07
M-1023	10 & 12	53/64	7/32	15/16	7/32	5- 1/8	.10
M-1025	12 & 14	15/16	1/4	1- 1/8	1/4	6- 1/4	.15
M-1027T	13 & 15	1- 1/16	17/64	1-11/64	17/64	6- 7/8	.20
M-1028	16 & 18	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
M-1028T	17 & 19	1-19/64	5/16	1-17/32	5/16	9	.38
M-1031	20 & 22	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
M-1031T	21 & 23	1-41/64	3/8	1- 3/4	3/8	10- 1/2	.71
M-1033T	22 & 27	1- 3/4	13/32	2	13/32	11- 3/8	.90
M-1033	24 & 26	1- 3/4	13/32	2	13/32	11- 3/8	.92
M-1035	25 & 28	2	7/16	2- 7/64	7/16	12- 1/4	1.1



SET No. WS-20R
9 Wrenches
In K-16 Roll Kit

SET No. WS-20B
In Cardboard Box
Weight, 2.8 lbs.

No.	Nominal Openings	No.	Nominal Openings
M-1020	6 & 7 mm	M-1027T	13 & 15 mm
M-1020T	8 & 9 mm	M-1028T	17 & 19 mm
M-1023T	9 & 11 mm	M-1031T	21 & 23 mm
M-1023U	10 & 11 mm	M-1033T	22 & 27 mm
M-1025	12 & 14 mm	.....	.....

METRIC FLARE NUT SUPERRENCH®

SELECTED ALLOY STEEL
DOUBLE HEAD SPLIT BOX



Each box end has a 6-point opening offset 15° from plane of handle with a tube opening slot at 22-1/2° to the axis of the handle.

Example of Order Nomenclature: "MFN-1517 WRENCH"

No.	Nom. Op. mm	Small End			Large End			Lgt.	Wgt. Each Lbs.
		Head Diam.	Head Thick.	Tube Clear	Head Diam.	Head Thick.	Tube Clear		
MFN-911	9 & 11	51/64	11/32	1/4	7/8	3/8	9/32	6-1/4	.12
MFN-1012	10 & 12	51/64	11/32	1/4	7/8	3/8	9/32	6-1/4	.12
MFN-1314	13 & 14	31/32	3/8	3/8	1-1/16	7/16	7/16	7-1/2	.25
MFN-1517	15 & 17	1-7/64	7/16	15/32	1-15/64	1/2	9/16	8-1/2	.40

METRIC BOX-OPEN END SUPERRENCH®

SELECTED ALLOY STEEL
SHORT SERIES—15° ANGLE—12 PT. BOX



Jaws are long, thin and pointed. Drop-forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, faces polished. Highly efficient where clearance is limited.

†Hex box opening.

No.	Nominal Openings mm	Open End		Box End		Overall Length	Wgt. Each Lbs.
		Width	Thick.	Diam.	Thick.		
†XOEMS-6	6 & 6	1/2	1/8	25/64	9/64	3- 1/8	.01
†XOEMS-7	7 & 7	35/64	1/8	7/16	9/64	3- 3/8	.02
†XOEMS-8	8 & 8	5/8	9/64	15/32	5/32	3-11/16	.02
XOEMS-9	9 & 9	43/64	9/64	17/32	5/32	4-	.03
XOEMS-10	10 & 10	47/64	3/16	35/64	15/64	4- 3/8	.08
XOEMS-11	11 & 11	13/16	13/64	5/8	1/4	4-11/16	.11
XOEMS-12	12 & 12	15/16	7/32	45/64	5/16	5- 1/16	.16
XOEMS-13	13 & 13	15/16	7/32	45/64	5/16	5- 1/16	.16
XOEMS-14	14 & 14	1- 3/64	15/64	13/16	21/64	5- 1/2	.22
XOEMS-15	15 & 15	1- 5/32	17/64	57/64	11/32	5-15/16	.28
XOEMS-16	16 & 16	1- 5/32	17/64	57/64	11/32	5-15/16	.32
XOEMS-17	17 & 17	1- 9/32	9/32	31/32	3/8	6- 7/16	.38
XOEMS-18	18 & 18	1- 9/32	9/32	31/32	3/8	6- 7/16	.38
XOEMS-19	19 & 19	1-25/64	19/64	1- 1/16	13/32	6- 7/8	.51

SET No. WS-22R
6 Wrenches

In K-3 Roll Kit

SET No. WS-22B
In Box

Weight, 1.1 lbs.



SET No. WS-23R
8 Wrenches

In K-12 Roll Kit

SET No. WS-23B
In Box

Weight, 1.7 lbs.

No.	Nom. Openings	No.	Nom. Openings
XOEMS-6	6 & 6 mm	XOEMS-9	9 & 9 mm
XOEMS-7	7 & 7 mm	XOEMS-10	10 & 10 mm
XOEMS-8	8 & 8 mm	XOEMS-11	11 & 11 mm

No.	Nom. Openings	No.	Nom. Openings
XOEMS-12	12 & 12 mm	XOEMS-16	16 & 16 mm
XOEMS-13	13 & 13 mm	XOEMS-17	17 & 17 mm
XOEMS-14	14 & 14 mm	XOEMS-18	18 & 18 mm
XOEMS-15	15 & 15 mm	XOEMS-19	19 & 19 mm

METRIC RATCHETING BOX SUPERRENCH®

DOUBLE HEAD PATTERN



Made from selected steel. All critical parts are heat-treated for lasting service and safety. Chrome-plated over nickel.

†Hex Openings

No.	Nominal Openings mm	Small Head		Large Head		Overall Length	Wgt. Each Lbs.
		Diam.	Thick.	Diam.	Thick.		
†RBM-0708	7 & 8	19/32	3/8	5/8	3/8	4-1/4	.13
†RBM-0910	9 & 10	23/32	3/8	7/8	3/8	5-1/2	.19
†RBM-1112	11 & 12	1	1/2	1- 1/8	1/2	6-3/4	.42
†RBM-1314	13 & 14	1	1/2	1- 1/8	1/2	6-3/4	.42
†RBM-1517	15 & 17	1- 9/32	1/2	1-7/16	1/2	8	.67
RBM-1618	16 & 18	1- 9/32	1/2	1-7/16	1/2	8	.67
RBM-1920	19 & 20	1-13/32	1/2	1-9/16	1/2	9-1/4	.75



SET No. WS-26R
7 Wrenches

In K-15 Roll Kit

SET No. WS-26B
In Cardboard Box

Weight, 4.5 lbs.

No.	Openings	No.	Openings	No.	Openings
RBM-0708	7 & 8 mm	RBM-1314	13 & 14 mm	RBM-1920	19 & 20 mm
RBM-0910	9 & 10 mm	RBM-1517	15 & 17 mm	.....	.....
RBM-1112	11 & 12 mm	RBM-1618	16 & 18 mm	.....	.....



METRIC BOX-OPEN END SUPERRENCH®

SELECTED ALLOY STEEL

LONG SERIES—15° ANGLE—12 PT. BOX



No.	Nominal Openings mm	Open End		Box End		Overall Length	Wgt. Ea., Lbs.
		Width	Thick.	Diam.	Thick.		
XOEM-8	8 & 8	11/16	3/16	17/32	7/32	5- 1/2	.06
XOEM-9	9 & 9	11/16	3/16	17/32	7/32	5- 1/2	.06
XOEM-10	10 & 10	51/64	13/64	37/64	1/4	6	.08
XOEM-11	11 & 11	29/32	7/32	21/32	5/16	6- 5/8	.13
XOEM-12	12 & 12	1- 1/32	1/4	47/64	21/64	7- 3/16	.16
XOEM-13	13 & 13	1- 1/32	1/4	47/64	21/64	7- 3/16	.16
XOEM-14	14 & 14	1- 5/32	9/32	53/64	11/32	7-15/16	.21
XOEM-15	15 & 15	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
XOEM-16	16 & 16	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
XOEM-17	17 & 17	1-13/32	5/16	1- 1/64	13/32	9- 5/8	.35
XOEM-18	18 & 18	1-13/32	5/16	1- 1/64	13/32	9- 5/8	.35
XOEM-19	19 & 19	1-17/32	11/32	1- 3/32	7/16	10- 5/8	.46
XOEM-20	20 & 20	1- 5/8	23/64	1-11/64	15/32	11- 9/16	.58
XOEM-21	21 & 21	1- 5/8	23/64	1-11/64	15/32	11- 9/16	.58
XOEM-22	22 & 22	1- 3/4	3/8	1- 1/4	1/2	12-11/16	.69
XOEM-23	23 & 23	1-55/64	25/64	1-21/64	9/16	13- 7/8	.85
XOEM-24	24 & 24	1-55/64	25/64	1-21/64	9/16	13- 7/8	.85
XOEM-25	25 & 25	1-31/32	13/32	1-27/64	5/8	15- 1/8	1.
XOEM-27	27 & 27	2- 3/32	27/64	1- 1/2	43/64	16- 1/4	1.3
XOEM-32	32 & 32	2-15/32	15/32	1-25/32	3/4	18-11/16	1.9



SET No. WS-24R

6 Wrenches

In K-13 Roll Kit

SET No. WS-24B

In Cardboard Box

Weight, 4.9 lbs.

No.	Openings	No.	Openings
XOEM-20	20 & 20 mm	XOEM-23	23 & 23 mm
XOEM-21	21 & 21 mm	XOEM-24	24 & 24 mm
XOEM-22	22 & 22 mm	XOEM-25	25 & 25 mm

METRIC 12-POINT BOX SUPERRENCH®

SELECTED ALLOY STEEL

LONG DOUBLE OFFSET PATTERN



Drop-forged from Selected Alloy Steel, heat-treated, chrome-plated over nickel, heads polished.
†Hex Opening

No.	Nominal Openings mm	Small Head		Large Head		Overall Length	Wgt. Ea., Lbs.
		Diam.	Thick.	Diam.	Thick.		
†M-8021T	6 & 7	3/8	11/64	13/32	3/16	3- 3/8	.04
M-8021	8 & 10	33/64	15/64	5/8	17/64	7- 1/2	.13
M-8723	9 & 11	37/64	1/4	21/32	9/32	7- 3/4	.13
M-8023	10 & 12	21/32	19/64	47/64	21/64	8- 1/16	.20
M-8025A	12 & 13	47/64	21/64	53/64	11/32	8-11/16	.25
M-8725B	13 & 14	47/64	21/64	53/64	11/32	8-11/16	.25
M-8727A	15 & 17	29/32	3/8	1	13/32	9- 3/4	.35
M-8729	16 & 18	29/32	13/32	1- 5/64	7/16	10- 1/8	.42
M-8029	17 & 19	1	13/32	1- 5/64	7/16	10- 1/2	.44
M-8031B	19 & 20	1- 1/8	31/64	1-11/64	33/64	12- 1/2	.65
M-8731B	21 & 22	1- 1/4	17/32	1-21/64	9/16	13- 3/8	1.
M-8033	23 & 24	1- 1/4	9/16	1-13/32	19/32	13- 7/8	1.
M-8034	23 & 27	1-21/64	39/64	1- 1/2	21/32	15- 1/2	1.2
M-8735A	25 & 28	1-13/32	41/64	1- 9/16	43/64	16	1.3
M-8735	26 & 29	1- 1/2	43/64	1- 9/16	23/32	16- 5/8	1.4
M-8039	30 & 32	1- 9/16	23/32	1-27/32	25/32	18- 3/4	2.8



SET No. WS-21R

6 Wrenches

In K-13 Roll Kit

SET No. WS-21B

In Cardboard Box

Weight, 1.8 lbs.

No.	Openings	No.	Openings
M-8021	8 & 10 mm	M-8725B	13 & 14 mm
M-8723	9 & 11 mm	M-8727A	15 & 17 mm
M-8023	10 & 12 mm	M-8029	17 & 19 mm

METRIC POWER-DRIVE SOCKETS

SINGLE HEXAGON OPENINGS

Made from extra tough Selected Alloy Steel and specially heat-treated to withstand the constant shock and pounding involved in electric and pneumatic nut setting and power nut running. Industrial Black Finish.

3/8 Inch SQUARE DRIVE



No.	Millimeter Opening	Nose Diameter	Depth Opening	Length	Wgt.
2M-607	7	7/16	1/8	1	.06
2M-608	8	31/64	5/32	1	.06
2M-609	9	17/32	7/32	1	.06
2M-610	10	19/32	13/64	1	.06
2M-611	11	41/64	7/32	1-1/16	.06
2M-612	12	45/64	1/4	1-1/16	.10
2M-613	13	3/4	1/4	1-1/8	.08
2M-614	14	13/16	5/16	1-1/8	.11
2M-617	17	31/32	23/64	1-3/16	.14
2M-619	19	1- 1/16	7/16	1-3/16	.17

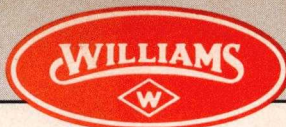
No.	Description	Sq. Fem.	Male	Length	Wgt. Ea.,
2-02A	Hex.-Sq. Shank	...	3/8 Sq x 1/4 Hex	2	.06
2-33A	Hex.-Sq. Shank	...	3/8 Sq x 7/16 Hex	2-3/4	.15
2-35A	Hex.-Sq. Shank	...	3/8 Sq x 7/16 Hex	5	.28
2-38A	Hex.-Sq. Shank	...	3/8 Sq x 7/16 Hex	8	.53
2-4A	Adapter	3/8	1/2 Square	1-3/8	.14
2-103A	Extension	3/8	3/8 Square	3	.09
2-106A	Extension	3/8	3/8 Square	6	.35
2-140A	Universal Joint, OD 7/8, range 55°	3/8	3/8 Square	2-5/16	.16

1/2 Inch SQUARE DRIVE



No.	Millimeter Opening	Nose Diameter	Depth Opening	Length	Wgt.
4M-610	10	41/64	13/64	1-1/2	.15
4M-611	11	11/16	7/32	1-1/2	.15
4M-612	12	47/64	1/4	1-1/2	.19
4M-613	13	51/64	1/4	1-1/2	.19
4M-614	14	55/64	5/16	1-1/2	.16
4M-615	15	57/64	13/32	1-1/2	.18
4M-617	17	1- 1/64	25/64	1-1/2	.22
4M-619	19	1- 9/64	9/16	1-5/8	.27
4M-622	22	1-15/16	33/64	1-5/8	.26
4M-624	24	1- 3/8	19/32	1-3/4	.34
4M-627	27	1-33/64	13/16	2	.35

No.	Description	Sq. Fem.	Male	Length	Wgt. Ea.,
4-2A	Adapter	1/2	3/8 Square	1- 1/2	.13
4-33A	Hex.-Sq. Shank	...	1/2 Sq x 7/16 Hex	2- 3/4	.18
4-35A	Hex.-Sq. Shank	...	1/2 Sq x 7/16 Hex	5	.40
4-53A	Hex.-Sq. Shank	...	1/2 Sq x 5/8 Hex	3	.28
4-55A	Hex.-Sq. Shank	...	1/2 Sq x 5/8 Hex	5	.53
4-105A	Extension	1/2	1/2 Square	5- 1/2	.54
4-110A	Extension	1/2	1/2 Square	10	1.
4-140A	Universal Joint, OD 1-1/8, range 55°	1/2	1/2 Square	2-15/16	.36



1/4"

1/4 Inch SQUARE DRIVE METRIC SUPERSOCKETS® and DRIVE TOOLS

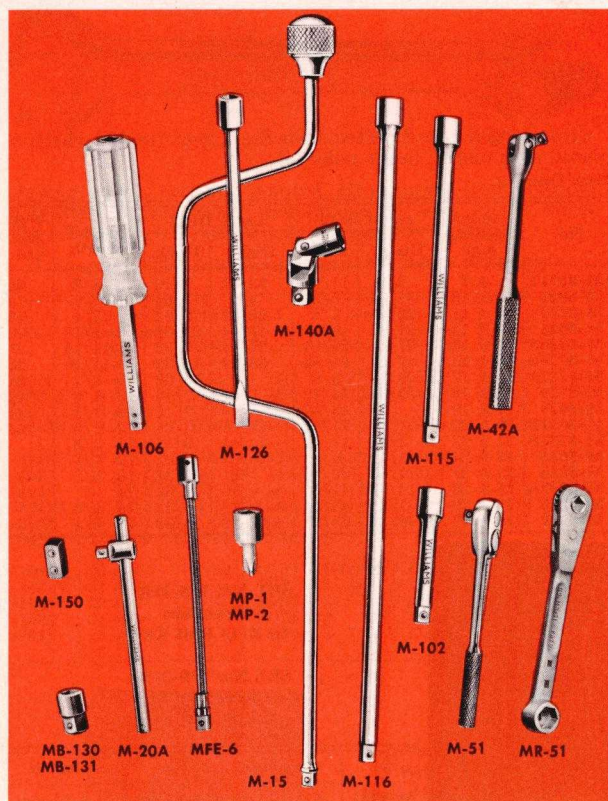
SELECTED ALLOY STEEL

SELECTED ALLOY STEEL

REGULAR 6-POINT SOCKETS

MM-604
to
MM-607MM-608
to
MM-614

mm Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
4	MM-604	17/64	1/8	27/32	.01
5	MM-605	5/16	1/8	27/32	.01
5.5	MM-605.5	11/32	1/8	27/32	.01
6	MM-606	23/64	1/8	27/32	.02
7	MM-607	13/32	1/8	27/32	.02
8	MM-608	29/64	5/32	27/32	.02
9	MM-609	1/2	3/16	27/32	.02
10	MM-610	35/64	13/64	27/32	.03
11	MM-611	39/64	7/32	27/32	.03
12	MM-612	41/64	1/4	27/32	.04
13	MM-613	11/16	1/4	27/32	.05
14	MM-614	49/64	5/16	27/32	.05



Example of Order Nomenclature: "M-51 RATCHET"

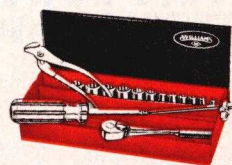
No.	Description	Wgt.
M-15	Speeder—15-3/4" long; knurled revolving grip.....	.59
M-20A	Sliding T Handle—4-1/2" long.....	.10
M-42A	Flex Handle only—5-3/4" long; flexible head, knurled grip.....	.25
M-51	Reversible Ratchet—5" long. 24 teeth in Ratchet-gear. Shift-lever reverses action instantly.....	.16
MR-51	Reversible Refrigeration Ratchet—6" long. Has 1/4" female drive in head; 5/16", 1/4", and 3/16" square openings and 1/2" hex opening in handle.....	.29
M-102	Extension—2" long.....	.06
M-106	Spinner Handle has plastic grip with 1/4" square drive-opening in end—6" long.....	.19
M-115	Extension—6" long.....	.17
M-116	Extension—14" long.....	.35
M-126	Regular Screwdriver Socket Attachment—6" long..	.09
MB-130	Adapter—1/4" sq. female and 3/8" sq. male. Adapts Handles with 1/4" sq. dr. to Sockets with 3/8" sq. dr.	.05
MB-131	Adapter—1/4" sq. male and 3/8" sq. female. Adapts Sockets with 1/4" sq. dr. to Handles with 3/8" sq. dr.	.05
M-140A	Universal Joint—Spring tension holds angle desired	.04
M-150	Plug Adapter 3/4" long; both ends 1/4" sq. male....	.02
MFE-6	Flexible Extension—6" long. Extremely useful in hard to reach spots. Strong flexible 1/4" dia. cable	.10
MP-1	Phillips Screwdriver Socket Attachment—No. 1 Phillips Drive to fit screws No. 4 and smaller.....	.02
MP-2	Phillips Screwdriver Socket Attachment—No. 2 Phillips Drive to fit screws Nos. 5 to 9 inclusive...	.03



SET No. WSM-30
14 Tools in TB-1A Metal Tool Box
9-1/4" x 2-1/4" x 1-1/4"
Total Weight, 1.5 lbs.

Makes nut driver for 12 Metric size fasteners with M-106 handle.

One Ea.	Description	One Ea.	Description	One Ea.	Description
MM-604	4 mm Skt	MM-608	8 mm Skt	MM-613	13 mm Skt
MM-605	5 mm Skt	MM-609	9 mm Skt	MM-614	14 mm Skt
MM-605.5	5.5 mm Skt	MM-610	10 mm Skt	M-20A	Sliding Tee
MM-606	6 mm Skt	MM-611	11 mm Skt	M-106	Spinner Handle
MM-607	7 mm Skt	MM-612	12 mm Skt		



SET No. WSM-31
16 Tools in TB-3A Metal Tool Box
9-1/2" x 3-1/2" x 1-1/4"
Total Weight, 2.1 lbs.

Extremely flexible metric set will handle many applications. M-106 Handle is a combination drive extension and nut driver.

One Ea.	Description	One Ea.	Description	One Ea.	Description
MM-604	4 mm Skt	MM-609	9 mm Skt	M-20A	Sliding Tee
MM-605	5 mm Skt	MM-610	10 mm Skt	M-51	Ratchet
MM-605.5	5.5 mm Skt	MM-611	11 mm Skt	M-106	Spinner Handle
MM-606	6 mm Skt	MM-612	12 mm Skt	PL-1519	Pliers
MM-607	7 mm Skt	MM-613	13 mm Skt		
MM-608	8 mm Skt	MM-614	14 mm Skt		

M-42RK FLEX HANDLE REPAIR KIT

For fast, efficient repair of new design M-42A Flex Handle.



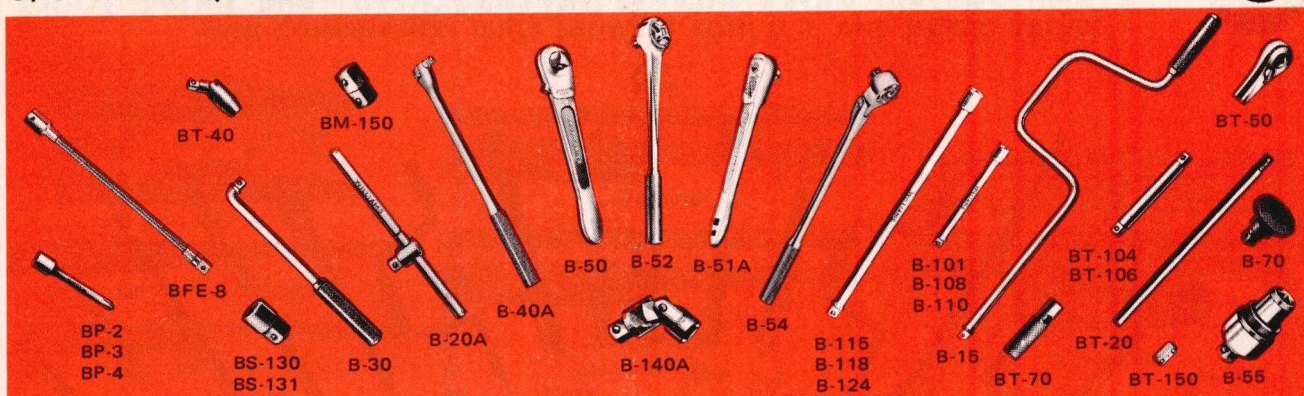
Qty.	No.	Description
1	M-42-1	Drive Tang
1	M-42-2	Spring
1	M-42-3	Hinge Pin

M-51 RATCHET REPAIR PARTS

No.	Description	No.	Description	No.	Description
M-51-1	Ring	M-51-4	Bearing Pin	M-51-7	Bolt Pin
M-51-2	Gear	M-51-5	Spring	M-51-8	Plunger
M-51-3	Dog	M-51-6	Bolt	M-51-W	Spanner

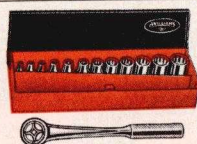
3/8 Inch SQUARE DRIVE METRIC SUPERSOCKETS® and DRIVE TOOLS

3/8



No.	Description	Wgt.
B-15	Speeder—16-1/8" long; Knurled revolving grip....	1.1
B-20A	Sliding T Handle—6-1/2" long.....	.26
B-30	Offset Handle—7-3/4" long; Knurled grip.....	.50
B-40A	Flex Handle—9-5/8"; flexible head, knurled grip.	.57
B-50	Drop-Forged Ratchet—6-1/2" long; complete with No. B-150 Plug-Connector.....	.43
B-51A	Reversible Ratchet for Refrigeration Service—6-1/2" long, 24 teeth in ratchet-gear. Has both 3/8" square male and 1/4" square female ratchet drive. Also has 3/16" and 1/4" square drive holes in handle end.	.44
B-52	Reversible Ratchet—7-5/8" long. Concentric type Mechanism of 82 tooth action permits rotation of nuts in close quarters. Shift lever reverses action	.56
B-54	Flex Head Ratchet Same mechanism as B-52. Handle flexes 90° either way from horizontal. 10-1/2" long.	.81
B-55	Ratchet Adapter—41 teeth. 2-1/8" long; outside diameter 1-3/16". Knurled shifter reverses action.	.31
B-70	Ratchet Spinner. Place between ratchet and socket for fast spinning of nuts by hand. 1-5/16" dia.....	.16
B-101	Extension Bar—1-1/2" long.....	.10
B-108	Extension Bar—3" long.....	.16
B-110	Extension Bar—5-1/2" long.....	.23
B-115	Extension Bar—10-3/8" long.....	.44
B-118	Extension Bar—18" long.....	.84
B-124	Extension Bar—24" long.....	1.
B-140A	Universal Joint—Fitted with spring tension to maintain operating angle desired—range approx. 140°..	.13
B-150	Ratchet Plug-Connector for B-50 Ratchet.....	.03
BFE-8	Flexible Extension—8" long. Extremely useful in hard to reach spots. Exceptionally strong flexible 5/16" diam. cable.....	.22
BM-150	Adapter—3/8" square male and 1/4" square female..	.03
BP-2	Phillips No. 2 Screwdriver, fits Screws Nos. 5 to 9..	.06
BP-3	Phillips No. 3 Screwdriver, fits Screws Nos. 10 to 16	.13
BP-4	Phillips No. 4 Screwdriver, fits Screws No. 18 and larger	.13
BS-130	Adapter—3/8" square female and 1/2" square male..	.13
BS-131	Adapter—3/8" square male and 1/2" square female..	.15
BT-20	Combo Tee Bar—7-1/2" long, fits BT-70 Handle Grip	.23
BT-40	Combo Flex Head—2-1/4" long, 3/8" male x 3/8" female	.13
BT-50	Combo Reversible Ratchet Head—2-13/16" long...	.29
BT-70	Combo Handle Grip—2-5/8" long, 3/8" female with cross hole.....	.11
BT-104	Combo Extension Bar—3-3/4" long, 3/8" male both ends.....	.19
BT-106	Combo Extension Bar—6" long, 3/8" male both ends	.30
BT-150	Combo Ratchet Plug Connector—1" long, 3/8" x 3/8" male.....	.03

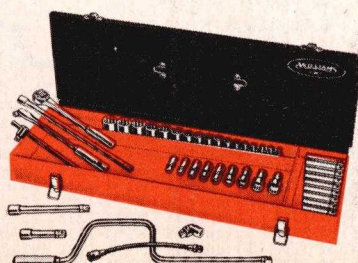
mm Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
REGULAR *6 and 12-POINT SOCKETS					
*6	BM-606	3/8	15/64	1-1/8	.05
*7	BM-607	7/16	11/64	1-1/8	.05
*8	BM-608	15/32	1/4	1-1/8	.05
*9	BM-609	17/32	11/32	1-1/8	.05
*10	BM-610	37/64	1/4	1-1/8	.05
*11	BM-611	39/64	5/16	1-1/8	.06
*12	BM-612	11/16	3/8	1-3/16	.05
*13	BM-613	23/32	5/16	1-3/16	.07
*14	BM-614	49/64	3/8	1-3/16	.09
*15	BM-615	13/16	29/64	1-3/16	.09
*16	BM-616	27/32	13/32	1-3/16	.09
*17	BM-617	59/64	15/32	1-3/16	.11
*18	BM-618	61/64	13/32	1-3/16	.11
*19	BM-619	1	1/2	1-3/16	.15
9	BM-1209	17/32	5/16	1-1/8	.05
10	BM-1210	37/64	1/4	1-1/8	.05
11	BM-1211	39/64	5/16	1-1/8	.05
12	BM-1212	11/16	25/64	1-3/16	.06
13	BM-1213	23/32	21/64	1-3/16	.06
14	BM-1214	49/64	25/64	1-3/16	.07
15	BM-1215	13/16	23/64	1-3/16	.08
16	BM-1216	27/32	25/64	1-3/16	.09
17	BM-1217	59/64	29/64	1-3/16	.11
18	BM-1218	61/64	13/32	1-3/16	.12
19	BM-1219	1	15/32	1-3/16	.13
20	BM-1220	1- 1/16	17/32	1-1/4	.17
21	BM-1221	1- 1/16	31/64	1-1/4	.17
22	BM-1222	1- 9/64	17/32	1-1/4	.18
EXTRA DEEP 6-POINT SOCKETS					
9	BMD-609	35/64	5/16	2	.09
10	BMD-610	35/64	3/8	2	.09
11	BMD-611	5/8	3/8	2	.10
12	BMD-612	11/16	7/16	2	.10
13	BMD-613	23/32	1/2	2	.10
14	BMD-614	25/32	1/2	2	.13
15	BMD-615	27/32	1/2	2- 1/4	.16
16	BMD-616	27/32	17/32	2- 1/4	.16
17	BMD-617	15/16	9/16	2- 3/8	.22
18	BMD-618	15/16	9/16	2- 3/8	.22
19	BMD-619	1	19/32	2- 1/2	.22
UNIVERSAL 6-POINT SOCKETS					
9	BMU-609	17/32	1/4	1-25/32	.11
10	BMU-610	17/32	1/4	1-25/32	.11
11	BMU-611	39/64	9/32	1-13/16	.11
12	BMU-612	11/16	5/16	1-27/32	.11
13	BMU-613	11/16	5/16	1-27/32	.11
14	BMU-614	49/64	11/32	1-57/64	.12
15	BMU-615	27/32	3/8	1-61/64	.13
17	BMU-617	59/64	13/32	1-63/64	.13
19	BMU-619	63/64	7/16	2- 1/64	.15



SET No. WSB-20
13 Tools in TB-2A Metal Box
10" x 2-13/16" x 1-3/8"
Total Weight, 3.1 lbs.

SET No. WSB-21

44 Tools
In
TB-7
Metal Box
23" x 7-3/4" x 2-1/4"
Total Weight,
14.2 lbs.

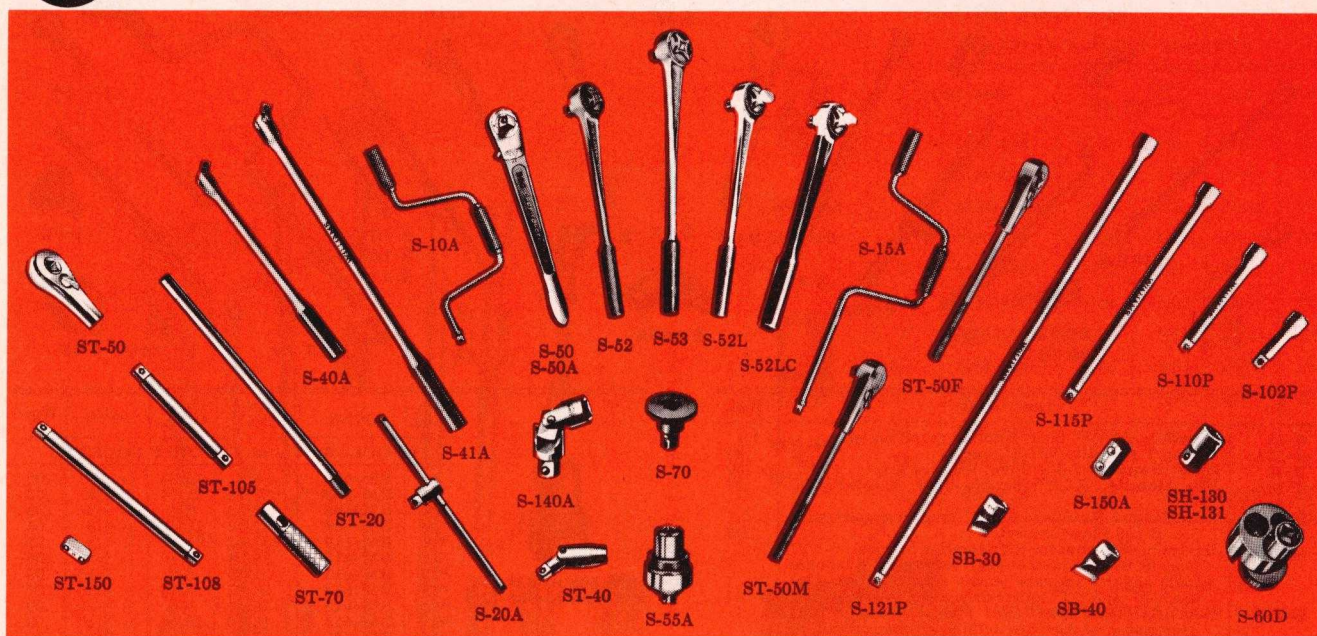


One Ea.	Descrip.	One Ea.	Descrip.	One Ea.	Descrip.	One Ea.	Descrip.
BM-606	6 mm	BM-1210	10 mm	BM-1214	14 mm	B-52	Ratchet
BM-607	7 mm	BM-1211	11 mm	BM-1215	15 mm		
BM-608	8 mm	BM-1212	12 mm	BM-1217	17 mm		
BM-1209	9 mm	BM-1213	13 mm	BM-1219	19 mm		

One Ea.	Description	One Ea.	Description	One Ea.	Description
BM-606	6 mm Skt	BM-1221	21 mm Skt	BMU-613	13 mm Univ
BM-607	7 mm Skt	BM-1222	22 mm Skt	BMU-614	14 mm Univ
BM-608	8 mm Skt	BMD-609	9 mm Deep	BMU-615	15 mm Univ
BM-1209	9 mm Skt	BMD-610	10 mm Deep	BMU-617	17 mm Univ
BM-1210	10 mm Skt	BMD-611	11 mm Deep	BMU-619	19 mm Univ
BM-1211	11 mm Skt	BMD-612	12 mm Deep	B-15	Speeder
BM-1212	12 mm Skt	BMD-613	13 mm Deep	BT-20A	Sliding Tee
BM-1213	13 mm Skt	BMD-614	14 mm Deep	B-40A	Flex Handle
BM-1214	14 mm Skt	BMD-615	15 mm Deep	B-52	Ratchet
BM-1215	15 mm Skt	BMD-617	17 mm Deep	B-108	3" Ext'n
BM-1216	16 mm Skt	BMD-619	19 mm Deep	B-110	5-1/2" Ext'n
BM-1217	17 mm Skt	BMU-609	9 mm Univ	B-115	10-1/2" Ext'n
BM-1218	18 mm Skt	BMU-610	10 mm Univ	B-140A	Universal Jt
BM-1219	19 mm Skt	BMU-611	11 mm Univ	BFE-8	Flex Ext'n
BM-1220	20 mm Skt	BMU-612	12 mm Univ		

1/2"

1/2 Inch SQUARE DRIVE METRIC SUPERSOCKETS® and DRIVE TOOLS



No.	Description	Wgt.
S-10A	Speeder —13-7/16" long, with knurled revolving grips	1.8
S-15A	Speeder —18-7/8" long, with knurled revolving grips	2.
S-20A	Sliding T-Bar Handle —11" long.....	.96
S-40A	Flex Handle —12-1/8" long; flexible head, knurled grip.....	1.4
S-41A	Flex Handle —17" long; flexible head, knurled grip.....	1.8
S-50	Ratchet —10" long, with Locked-in Plug Connector	1.3
S-50A	Ratchet —10" long, without Plug Connector.....	1.3
S-52	Reversible Ratchet —11-1/4" long. 82 tooth action. Shifter reverses action instantly.....	1.2
S-52L	Linemen's Reversible Ratchet —11-1/4" long, 82 tooth action. Special shifter for operators using gloves...	1.3
S-52LC	Linemen's Reversible Ratchet —11-1/2" long. Same as S-52L with Cementex insulated handle up to head.	1.5
S-53	Reversible Ratchet —15" long. Has same fine mechanism as S-52 Ratchet	1.6
S-55A	Ratchet Adapter —41 teeth. 2-5/8" long; outside diameter 1-5/8". Knurled shifter reverses action instantly	.66
S-60D	Stud Remover . Stud capacity 1/4" to 3/4".....	.52
S-70	Ratchet Spinner —1-3/4" diameter. Use between ratchet and socket to spin nuts fast by hand.....	.3
S-102P	Extension Bar —2-1/2" long.....	.27
S-110P	Extension Bar —5-1/2" long.....	.53
S-115P	Extension Bar —10-1/2" long.....	1.
S-121P	Extension Bar —20" long.....	2.1
S-140A	Universal Joint —Spring tension maintains angle....	.34
S-150A	Ratchet Plug-Connector for S-50 Ratchet.....	.08
SB-30	Screwdriver "drag link" Socket—7/64 x 15/16" blade	.14
SB-40	Screwdriver "drag link" Socket—3/32 x 1-1/4" blade	.16
SH-130	Adapter —1/2" square female and 3/4" square male...	.31
SH-131	Adapter —1/2" square male and 3/4" square female...	.44
ST-20	Combo Tee Bar —10-1/4" long, fits ST-70 Handle Grip	.58
ST-40	Combo Flex Head —3-1/16" long, 1/2" M x 1/2" F...	.31
ST-50	Combo Reversible Ratchet Head —3-3/4" long.....	.70
ST-50F	Reversible Ratchet —10-1/2" long, 1/2" F in head....	1.6
ST-50M	Reversible Ratchet —10-1/2", 1/2" Male in head....	1.7
ST-70	Combo Handle Grip —3-1/2", 1/2" F with cross hole...	.28
ST-105	Combo Extension Bar —5" long, 1/2" male both ends	.41
ST-108	Combo Extension Bar —8" long, 1/2" male both ends	.66
ST-150	Combo Ratchet Plug Connector —1-1/4" long, 1/2" x 1/2" male.....	.08

SET No. WSS-25

13 Tools
In TB-5 Metal Box
12-1/2" x 3-3/4" x 2-1/4"
Total Weight, 5.4 lbs.

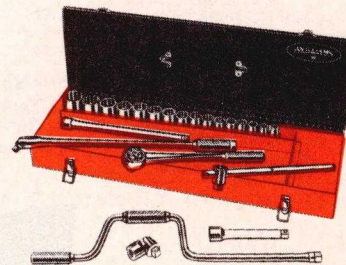


One Ea.	Desc.	One Ea.	Desc.	One Ea.	Desc.	One Ea.	Desc.
STM-1212	12 mm	STM-1216	16 mm	STM-1221	21 mm	S-52	Ratchet
STM-1213	13 mm	STM-1217	17 mm	STM-1222	22 mm	.....	.....
STM-1214	14 mm	STM-1219	19 mm	STM-1224	24 mm	.....	.....
STM-1215	15 mm	STM-1220	20 mm	STM-1227	27 mm	.....	.....

mm Opng.	No.	Nose Dia.	Dpth. Opng.	Lgth.	Wgt.
REGULAR 12-POINT SOCKETS					
10	STM-1210	37/64	23/64	1- 1/2	.11
11	STM-1211	5/8	23/64	1- 1/2	.11
12	STM-1212	43/64	25/64	1- 1/2	.11
13	STM-1213	47/64	25/64	1- 1/2	.11
14	STM-1214	25/32	27/64	1- 1/2	.11
15	STM-1215	53/64	7/16	1-17/32	.13
16	STM-1216	7/8	15/32	1-17/32	.13
17	STM-1217	15/16	33/64	1-17/32	.14
18	STM-1218	31/32	9/16	1- 9/16	.17
19	STM-1219	1- 1/64	9/16	1- 9/16	.17
20	STM-1220	1- 3/64	19/32	1- 9/16	.19
21	STM-1221	1- 1/8	5/8	1-19/32	.23
22	STM-1222	1-11/64	5/8	1-41/64	.27
23	STM-1223	1-13/64	21/32	1-41/64	.28
24	STM-1224	1-15/64	21/32	1-41/64	.28
25	STM-1225	1-19/64	11/16	1-11/16	.33
26	STM-1226	1-25/64	13/16	1-27/32	.47
27	STM-1227	1- 7/16	13/16	1-27/32	.47
28	STM-1228	1-15/32	13/16	1-27/32	.48
29	STM-1229	1- 1/2	13/16	1-27/32	.52
30	STM-1230	1-19/32	27/32	1-29/32	.59
31	STM-1231	1- 5/8	27/32	1-29/32	.66
32	STM-1232	1-21/32	7/8	2	.69
33	STM-1233	1-47/64	7/8	2	.78
34	STM-1234	1-49/64	15/16	2- 1/8	.81
35	STM-1235	1-53/64	15/16	2- 1/8	.86
36	STM-1236	2	15/16	2- 1/8	.92

SET No. WSS-26

27 Tools
In TB-7 Metal Box
23" x 7-3/4" x 2-1/4"
Total Weight, 15.6 lbs.



One Ea.	Description	One Ea.	Description	One Ea.	Description
STM-1210	10 mm Skt	STM-1218	18 mm Skt	S-15A	Speeder
STM-1211	11 mm Skt	STM-1219	19 mm Skt	S-20A	Sliding Tee
STM-1212	12 mm Skt	STM-1220	20 mm Skt	S-41A	Flex Handle
STM-1213	13 mm Skt	STM-1221	21 mm Skt	S-52	Ratchet
STM-1214	14 mm Skt	STM-1222	22 mm Skt	S-110P	5-1/2" Ext'n
STM-1215	15 mm Skt	STM-1224	24 mm Skt	S-115P	10-1/2" Ext'n
STM-1216	16 mm Skt	STM-1227	27 mm Skt	S-140A	Universal Jt.
STM-1217	17 mm Skt	STM-1230	30 mm Skt		



U.S./METRIC DIAL TORQUE WRENCHES

WITH COMBINATION DIALS SHOWING BOTH U.S. AND METRIC VALUES



Now you can measure U.S. or Metric torque values with Williams exclusive combination dial. Equally accurate in both right and left hand torque, calibration is certified and traceable to the National Bureau of Standards. See page 50 for dial detail.

No.	Drive Size	U.S.		METRIC		Overall Length, Inches		Wgt. Each Lbs.
		Range	Increments	Range	Increments	Wrench Only	With Extension	
SINGLE POINTER STYLE								
BTD-1-250	3/8"	0-250 in lb	5 in lb	0-280 cm kg	5 cm kg	14-7/8	.....	2.0
STD-1-250F	1/2"	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
FOLLOWER NEEDLE STYLE								
MTD-2-75	1/4"	0-75 in lb	1 in lb	0-90 cm kg	2 cm kg	10	.....	1.75
BTD-2-250	3/8"	0-250 in lb	5 in lb	0-280 cm kg	5 cm kg	14-7/8	.....	2.0
BTD-2-50F	3/8"	0-50 ft lb	1 ft lb	0-7 m kg	2 m kg	14-7/8	.....	2.0
STD-2-250F	1/2"	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
HTD-2-600F	3/4"	0-600 ft lb	10 ft lb	0-80 m kg	2 m kg	25-1/2	46-1/2	10.5
ELECTRIC LIGHT SIGNAL STYLE								
BTD-3-50F	3/8"	0-50 ft lb	1 ft lb	0-7 m kg	0.2 m kg	14-7/8	.....	2.0
STD-3-250F	1/2"	0-250 ft lb	5 ft lb	0-35 m kg	1 m kg	22-1/2	.....	3.75
HTD-3-600F	3/4"	0-600 ft lb	10 ft lb	0-80 m kg	2 m kg	25-1/2	46-1/2"	10.50
XTD-3-2000F	1"	0-2000 ft lb	50 ft lb	0-280 m kg	5 m kg	13-1/2	*120"	21.0

*To be used with Torque Multiplier or with T-Handle assembly only. Use center bar and 2 handles for low torque values, and all 4 handles for torque values over 1000 ft lb.

U.S./METRIC TORQUE LIMITING WRENCHES



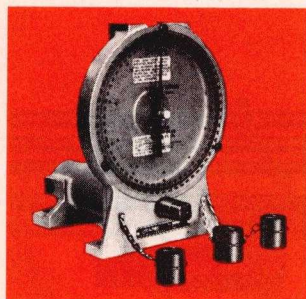
Easy to operate. Merely turn the micrometer style handle to the desired setting and lock in place. The torque limiting device will momentarily release automatically when the predetermined torque has been reached by feel impulse and with audible signal. Convenient dual marking on models indicated facilitate mixed U.S. and Metric applications.

No.	Drive Size	Type Head	Setting	U.S.		METRIC		Lgth. Inches	Wgt. Lbs.
				Range	Increm.	Range	Increm.		
DUAL U.S./METRIC MARKINGS									
MTW-0PC	1/4"	Plain	Adjust.	30- 200 in lb	1 in lb	40.3- 236.2 cm kg	1.2 cm kg	9	.6
MTW-0RC	1/4"	Ratch.	Adjust.	30- 200 in lb	1 in lb	40.3- 236.2 cm kg	1.2 cm kg	9-1/2	.7
BTW-2PC	3/8"	Plain	Adjust.	150-1000 in lb	5 in lb	201.6-1180.8 cm kg	5.8 cm kg	14	2.1
BTW-2PCF	3/8"	Plain	Adjust.	15- 100 ft lb	1/2 ft lb	2.4- 14.2 m kg	.07 m kg	14	2.1
BTW-2RC	3/8"	Ratch.	Adjust.	150-1000 in lb	5 in lb	201.6-1180.8 cm kg	5.8 cm kg	15	2.3
BTW-2RCF	3/8"	Ratch.	Adjust.	15- 100 ft lb	1/2 ft lb	2.4- 14.2 m kg	.07 m kg	15	2.3
STW-3PCF	1/2"	Plain	Adjust.	30- 250 ft lb	1 ft lb	4.8- 35.3 m kg	.14 m kg	20	2.3
STW-3RCF	1/2"	Ratch.	Adjust.	30- 250 ft lb	1 ft lb	4.8- 35.3 m kg	.14 m kg	21	2.8
HTW-4PCF	3/4"	Plain	Adjust.	100- 600 ft lb	2-1/2 ft lb	15.6- 84.7 m kg	.4 m kg	40	9.5
HTW-4RCF	3/4"	Ratch.	Adjust.	100- 600 ft lb	2-1/2 ft lb	15.6- 84.7 m kg	.4 m kg	40	10.
XTW-5PCFA	1"	Plain	Adjust.	300-2000 ft lb	10 ft lb	48-270 m kg	1.4 m kg	†105	57.5
METRIC MARKINGS ONLY									
MTW-0RCM	1/4"	Ratch.	Adjust.	.....	.....	30- 200 cm kg	1 cm kg	9-1/2	.7
BTW-2RCM	3/8"	Ratch.	Adjust.	.....	.....	150-1000 cm kg	5 cm kg	15	2.3
STW-3RCM	1/2"	Ratch.	Adjust.	.....	.....	5- 35 m kg	0.5 m kg	21	2.8

†Overall length fully assembled with both handles. Entire set comes complete in wooden box.



U.S./METRIC TORQUE WRENCH TESTERS

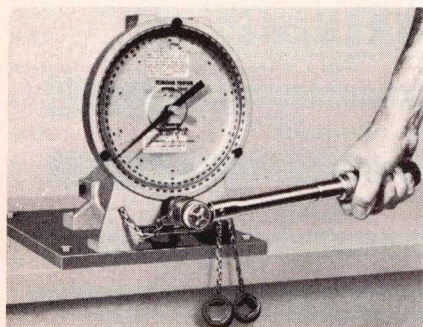


Williams Torque Wrench Testers, designed on the Torsion Bar principle, will quickly test the accuracy of any manual Torque Wrench. All models are similar to illustration at the left. These instruments need not be mounted level nor in a specific plane for accurate performance. They can be operated in either a clockwise or counterclockwise direction. Torque applied to the input of the tester actuates a control arm beneath an accurately calibrated scale. After torque has been applied, the control arm which also acts as a stay-set indicator, remains on the maximum torque reading obtained, until it is manually reset to zero. The reading on the scale of the tester is compared with that of the torque wrench.

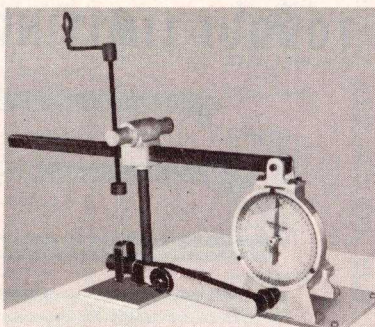
Each Tester comes with combination U.S. Standard and Metric Kilogram Dial Face as listed in table below. Certified accuracy of all models is $\pm 1\%$, or one scale graduation, whichever is greater. Tests torque wrenches meeting MIL-H-26497, MLT-26639C or GGG-W-686 specifications, in sizes compatible with the range of each tester. See Technical Bulletin TB-129 for complete operational details. Loader and Calibrator assemblies are shown below.

No.	Range		Increments		Drive Size	Adapters Included	Wgt.
	Metric	U.S.	Metric	U.S.			
TT-F7085	0-290 cm kg	0-250 in lb	1 cm kg	1 in lb	3/8" Female	3/8" Male x 1/4" Female	10.5
TT-F7075	0-2000 cm kg	0-1800 in lb	5 cm kg	2 in lb	3/8" Female	3/8" Male x 1/4" Female	10.5
TT-F7065	0-70 m kg	0-500 ft lb	1 m kg	5 ft lb	3/4" Male	3/8" Male x 1/2" Female	12.0
TT-F7045	0-140 m kg	0-1000 ft lb	1 m kg	5 ft lb	1" Male	3/4" Female x 3/4" Female	
						3/4" Female x 1/2" Female	
						3/4" Female x 3/8" Female	15.0
						1" Female x 1" Female	
						1" Female x 3/4" Female	
No.	Description						Wgt.
MECHANICAL LOADER							
TT-7047	As illustrated below, center. Overall Length, 48"						10.0
CALIBRATOR ASSEMBLIES (Weights Not Included)							
TT-7085631	Use with TT-F7085 Torque Tester. Requires three 5 pound weights.						8.0
TT-7075631	Use with TT-F7075 Torque Tester. Requires three 5 pound and two 20 pound weights.						11.0
TT-7065631	Use with TT-F7065 Torque Tester. Requires three 5 pound and four 20 pound weights.						19.0
	Use with TT-F7045 Torque Tester. Requires two 5 pound and nine 20 pound weights.						
WEIGHTS							
TT-73630-5	5 pound weight for use with Calibrator Assemblies listed in above table.						5.0
TT-73630-20	20 pound weight for use with Calibrator Assemblies listed in above table.						20.0

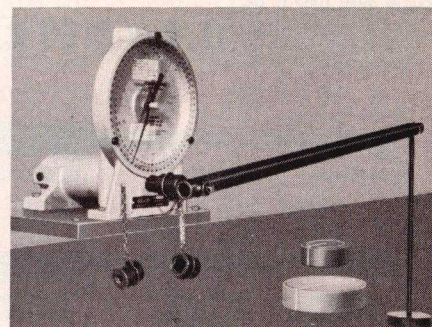
TORQUE TESTER — Checking Accuracy of Wrench



TORQUE TESTER with MECHANICAL LOADER

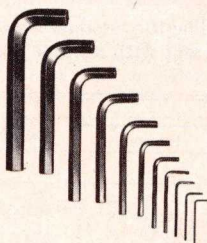


TORQUE TESTER with CALIBRATOR ASSEMBLY



METRIC HEX KEY WRENCH SET

SELECTED STEEL



SET No. WS-27R
11 Hex Key Wrenches
In Plastic Kit
Total Weight, 2.3 lbs.

Excellent range of popular sizes. Made from selected steel.
SOLD IN SET ONLY

Size Millimeter	Short Arm	Long Arm	Size Millimeter	Short Arm	Long Arm
2	23/32	1-15/16	8	1-9/16	4-1/16
2.5	25/32	2-1/32	10	1-9/16	4-7/32
3	7/8	2-3/8	12	1-3/4	5-3/16
4	1-1/16	2-13/16	14	1-7/8	5-3/4
5	1-3/32	3-1/16	17	2	6-5/16
6	1-9/32	3-9/32	.....	.....	.....

METRIC FEELER GAUGES

TEMPERED SWEDISH STEEL



Blades are 12" long by 1/2" wide, and precision made.

No.	Thickness		Wgt. Per 1/2 Doz.	No.	Thickness		Wgt. Per 1/2 Doz.
	mm	Inches			mm	Inches	
GL-0015	.037	.0015	.021	GL-015	.381	.015	.125
GL-002	.051	.002	.025	GL-016	.406	.016	.125
GL-003	.076	.003	.033	GL-017	.432	.017	.125
GL-004	.102	.004	.044	GL-018	.457	.018	.187
GL-005	.127	.005	.056	GL-020	.508	.020	.187
GL-006	.152	.006	.062	GL-022	.559	.022	.187
GL-007	.178	.007	.062	GL-024	.610	.024	.187
GL-008	.203	.008	.062	GL-025	.635	.025	.187
GL-009	.229	.009	.062	GL-028	.711	.028	.187
GL-010	.254	.010	.062	GL-030	.762	.030	.250
GL-011	.279	.011	.062	GL-032	.813	.032	.250
GL-012	.305	.012	.062	GL-035	.889	.035	.312
GL-013	.330	.013	.125	GL-040	1.016	.040	.375
GL-014	.356	.014	.125	.....	.....	.....	.....

**FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS**

Ask for Technical Bulletin TB-110B which covers design features and application of Williams Industrial Black Finish Ratchets and Wrenches.

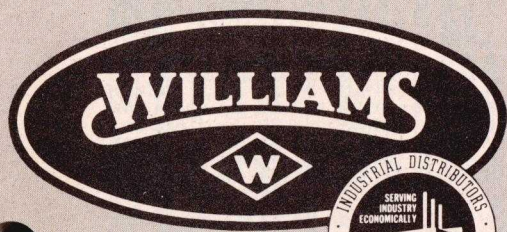


Never hammer on a wrench handle, unless it is especially designed for the purpose. Use a striking face wrench to loosen frozen nuts, and be sure to wear safety glasses.



Section 5 BLACK WRENCHES and RATCHETS

5
BLACK
WRENCHES
AND
RATCHETS



THIS IS
THE TEAM
THAT DELIVERS



TOOLPOWER
WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE





SUPERJUSTABLE® WRENCHES

SELECTED ALLOY STEEL
INDUSTRIAL BLACK FINISH



Drop-forged and heat-treated, with satin finish handles. Individually packaged.

Example of Order Nomenclature: "ABL-8 BLACK ADJUSTABLE"

See Pages 6 and 7 for complete description and parts assortments.

*Parts set consists of one each Knurl, Pin, Spring or Retainer Ring

No.	Size Inch	Capacity	Thickness Head		Wgt. Each Lbs.	Replacement Parts	
			Jaw Tip	Extreme		Jaw No.	*Set No.
REGULAR							
AB-4	4	1/2	9/64	5/16	.11	AB-4-1	AP-4-2
AB-6	6	3/4	7/32	3/8	.27	AB-6-1	AP-6-2
AB-8	8	1	17/64	1/2	.52	AB-8-1	AP-8-2
AB-10	10	1-1/8	23/64	19/32	.90	AB-10-1	AP-10-2
AB-12	12	1-5/16	15/32	23/32	1.6	AB-12-1	AP-12-2
AB-15	15	1-3/4	19/32	31/32	3.6	AB-15-1	AP-15-2
AB-18	18	2-1/16	23/32	1-3/16	6.	AB-18-1	AP-18-2
LOCKAJUST							
ABL-6	6	3/4	7/32	3/8	.27	AB-6-1	APL-6-3
ABL-8	8	1	17/64	1/2	.52	AB-8-1	APL-8-3
ABL-10	10	1-1/8	23/64	19/32	.90	AB-10-1	APL-10-3
ABL-12	12	1-5/16	15/32	23/32	1.6	AB-12-1	APL-12-3
ABL-15	15	1-3/4	19/32	31/32	3.6	AB-15-1	APL-15-3

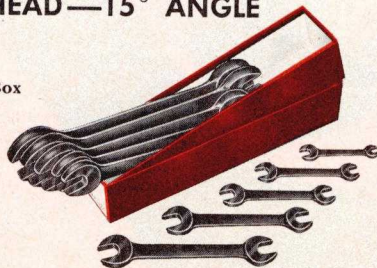
WILLIAMS

OPEN END WRENCH SET

INDUSTRIAL BLACK FINISH
DOUBLE HEAD—15° ANGLE

SET No. WS-10AB
10 Wrenches in Carboard Box
Weight, 11.8 lbs.

This set of black finish wrenches fits all new and old regular and finished series nuts and bolts and hex head cap screws 1/4" thru 1" diameters and heavy series nuts and bolts 1/4" thru 3/8" diameters.



No.	Nominal Openings	No.	Nominal Openings
BW-723	3/8" x 7/16"	BW-33A	7/8" x 1 1/16"
BW-25	1/2" x 5/8"	BW-735	1" x 1 1/8"
BW-727	5/8" x 3/4"	BW-37	1 1/16" x 1 1/4"
BW-29	1 1/16" x 2 3/32"	BW-39A	1 5/16" x 1 1/2"
BW-731	3/4" x 1 1/16"	BW-39C	1 3/8" x 1 7/16"

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

OPEN END (ENGINEERS') WRENCHES

INDUSTRIAL BLACK FINISH
SINGLE HEAD—15° ANGLE



Smooth finish, No. BW-11 and larger have tapered handle.

Example of Order Nomenclature: "BW-709 WRENCH"

MILITARY DESCRIPTION: GGG-W-636D-5, TYPE V

No.	Nominal Opening	Head		Overall Length	Weight Ea., Lbs.
		Width	Thickness		
BW-000 S	3/16	25/32	5/32	2-1/2	.03
BW-00 S	1/4	15/16	3/16	2-7/8	.05
BW-00	5/16	25/32	3/16	3-5/8	.06
BW-700	3/8	15/16	7/32	4-1/8	.09
BW-701	7/16	1- 5/32	1/4	4-3/4	.13
BW-1	1/2	1- 5/32	1/4	4-3/4	.13
BW-702	9/16	1-11/32	9/32	5-5/8	.20
BW-2	19/32	1-11/32	9/32	5-5/8	.20
BW-703	5/8	1-17/32	5/16	6-1/2	.33
BW-3	11/16	1-17/32	5/16	6-1/2	.33
BW-704	3/4	1-13/16	11/32	7-3/8	.44
BW-4	25/32	1-13/16	11/32	7-3/8	.42
BW-705	13/16	2	13/32	8-3/8	.64
BW-5	7/8	2	13/32	8-3/8	.61
BW-6	15/16	2- 1/4	15/32	9-1/2	.91
BW-706	1	2- 1/4	15/32	9-1/2	.89
BW-7	1- 1/16	2- 9/16	17/32	10-3/4	1.3
BW-707	1- 1/8	2- 9/16	17/32	10-3/4	1.4
BW-8	1- 1/4	2-15/16	5/8	12-1/4	2.1
BW-8A	1- 5/16	2-15/16	5/8	12-1/4	2.1
BW-708A	1- 3/8	2-15/16	5/8	12-1/4	2.
BW-9	1- 7/16	3- 3/8	11/16	13-7/8	2.7
BW-709	1- 1/2	3- 3/8	11/16	13-7/8	2.7
BW-10	1- 5/8	3-21/32	3/4	15-1/2	3.5
BW-10A	1-11/16	3-21/32	3/4	15-1/2	3.5
BW-11	1-13/16	4- 1/16	27/32	17-1/8	4.6
BW-11A	1- 7/8	4- 1/16	27/32	17-1/8	4.5
BW-12	2	4- 1/2	29/32	18-7/8	5.8
BW-12A	2- 1/16	4- 1/2	29/32	18-7/8	5.8
BW-13	2 3/16	4-15/16	31/32	20-3/4	7.2
BW-13A	2- 1/4	4-15/16	31/32	20-3/4	7.2
BW-14	2- 3/8	5- 5/16	1- 1/32	22-3/4	10.
BW-14A	2- 7/16	5- 5/16	1- 1/32	22-3/4	9.6
BW-15	2- 9/16	5-15/16	1- 1/8	24	11.1
BW-15A	2- 5/8	5-15/16	1- 1/8	24	11.2
BW-16	2- 3/4	6- 1/2	1- 9/32	26-1/2	13.6
BW-16B	2-13/16	6- 1/2	1- 9/32	26-1/2	13.9
BW-16A	2-15/16	6- 1/2	1- 9/32	26-1/2	13.7
BW-17A	3	7- 1/4	1- 3/8	30	18.9
BW-17	3- 1/8	7- 1/4	1- 3/8	30	18.9
BW-18A	3- 3/8	8- 1/8	1-17/32	34	28.1
BW-18	3- 1/2	8- 1/8	1-17/32	34	26.5
BW-19B	3- 3/4	8- 3/4	1- 5/8	38	33.1
BW-19	3- 7/8	8- 3/4	1- 5/8	38	33.3
BW-19C	4- 1/8	8- 3/4	1- 5/8	38	31.5
BW-19A	4- 1/4	8- 3/4	1- 5/8	38	32.3
BW-20B	4- 1/2	10- 1/4	1- 7/8	42	50.5
BW-20	4- 5/8	10- 1/4	1- 7/8	42	50.5
BW-20A	5	10- 1/4	1- 7/8	42	50.4
BW-21A	5- 3/8	12- 3/8	2- 1/2	47	90.5
BW-21B	5- 3/4	12- 3/8	2- 1/2	47	90.5
BW-21C	6- 1/8	12- 3/8	2- 1/2	47	85.
BW-22A	6- 7/8	15- 1/4	3	52	156.
BW-22B	7- 5/8	15- 1/4	3	52	149.

WILLIAMS

OPEN END WRENCH SET

INDUSTRIAL BLACK FINISH
DOUBLE HEAD—15° ANGLE



SET No. WS-25BR
6 Wrenches in K-10 Roll Kit

SET No. WS-25BB
6 Wrenches in Carboard Box
Weight, 3.3 lbs.

This set of black finish wrenches fits all new regular, heavy and finished series nuts and bolts and hex head cap screws 1/4" thru 3/8" diameters.

No.	Nominal Openings	No.	Nominal Openings
BW-723	3/8" x 7/16"	BW-29C	1 1/16" x 1 1/16"
BW-725B	1/2" x 5/8"	BW-733	7/8" x 1"
BW-729	5/8" x 3/4"	BW-34A	1 5/16" x 1 1/16"



OPEN END (ENGINEERS') WRENCHES

INDUSTRIAL BLACK FINISH
DOUBLE HEAD—15° ANGLE

Drop-forged and heat-treated. Smooth finish.

Example of Order Nomenclature: "BW-725A WRENCH"

No.	Nominal Openings		Small Head		Large Head		Overall Length	Weight Each, Lbs.
			Width	Thick.	Width	Thick.		
BW-721	5/16 &	3/8	39/64	3/16	23/32	3/16	4- 1/4	.05
BW- 21	5/16 &	13/32	39/64	13/64	25/32	13/64	4- 1/2	.06
BW-722	5/16 &	7/16	47/64	13/64	53/64	13/64	4-11/16	.07
BW-723	3/8 &	7/16	47/64	13/64	53/64	13/64	4-11/16	.07
BW-723A	3/8 &	1/2	25/32	7/32	15/16	7/32	4- 7/8	.08
BW- 23	13/32 &	1/2	25/32	7/32	15/16	7/32	4- 7/8	.08
BW-725	7/16 &	1/2	53/64	7/32	15/16	7/32	5- 1/8	.10
BW-725A	7/16 &	9/16	53/64	15/64	1- 1/16	15/64	5- 5/8	.12
BW-725B	1/2 &	9/16	15/16	1/4	1- 1/8	1/4	6- 1/4	.15
BW- 25	1/2 &	19/32	15/16	1/4	1- 1/8	1/4	6- 1/4	.16
BW-726	1/2 &	5/8	1- 1/16	17/64	1-11/64	17/64	6- 7/8	.20
BW- 26	1/2 &	11/16	1- 1/16	9/32	1-19/64	9/32	7- 1/8	.23
BW-727	9/16 &	5/8	1- 1/16	17/64	1-11/64	17/64	6- 7/8	.20
BW- 27C	9/16 &	11/16	1- 1/16	9/32	1-19/64	9/32	7- 1/8	.23
BW- 27	19/32 &	11/16	1-11/64	9/32	1-19/64	9/32	7- 1/2	.26
BW- 27B	5/8 &	11/16	1-11/64	9/32	1-19/64	9/32	7- 1/2	.26
BW-728	9/16 &	3/4	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
BW-729	5/8 &	3/4	1-11/64	19/64	1-15/32	19/64	8- 1/4	.32
BW- 29B	11/16 &	3/4	1-19/64	5/16	1-17/32	5/16	9	.38
BW- 29	11/16 &	25/32	1-19/64	5/16	1-17/32	5/16	9	.38
BW- 29C	11/16 &	13/16	1-19/64	5/16	1-17/32	5/16	9	.37
BW-730	5/8 &	13/16	1-19/64	5/16	1-17/32	5/16	9	.36
BW- 30	11/16 &	7/8	1-19/64	21/64	1-41/64	21/64	9- 3/8	.45
BW-731	3/4 &	13/16	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
BW-731A	3/4 &	7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
BW- 31B	25/32 &	13/16	1-17/32	11/32	1-41/64	11/32	9- 3/4	.54
BW- 31	25/32 &	7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.53
BW-731B	13/16 &	7/8	1-17/32	11/32	1-41/64	11/32	9- 3/4	.53
BW- 32B	13/16 &	15/16	1-41/64	3/8	1- 3/4	3/8	10- 1/2	.71
BW- 33A	7/8 &	15/16	1-41/64	3/8	1- 3/4	3/8	10- 1/2	.69
BW-733	7/8 &	1	1- 3/4	13/32	2	13/32	11- 3/8	.92
BW- 33C	15/16 &	1	1- 3/4	13/32	2	13/32	11- 3/8	.91
BW- 34	7/8 &	1- 1/16	1- 3/4	13/32	2	13/32	11- 3/8	.90
BW- 34A	15/16 &	1- 1/16	1- 3/4	13/32	2	13/32	11- 3/8	.90
BW- 35	31/32 &	1- 1/16	1- 3/4	13/32	2	13/32	11- 3/8	.92
BW-735	1	1- 1/8	2	7/16	2- 7/64	7/16	12- 1/4	1.1
BW- 36B	1- 1/16 &	1- 1/8	2	7/16	2- 7/64	7/16	12- 1/4	1.2
BW- 37	1- 1/16 &	1- 1/4	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
BW-737	1- 1/8 &	1- 1/4	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
BW- 37A	1- 1/8 &	1- 5/16	2- 7/64	15/32	2-29/64	15/32	13- 1/4	1.4
BW- 39B	1- 1/4 &	1- 5/16	2-11/32	1/2	2-11/16	1/2	14- 3/8	1.9
BW- 39	1- 1/4 &	1- 7/16	2-11/32	1/2	2-11/16	1/2	14- 3/8	1.8
BW- 39A	1- 5/16 &	1- 1/2	2-37/64	17/32	2-13/16	17/32	15- 1/2	2.3
BW- 39C	1- 3/8 &	1- 7/16	2-37/64	17/32	2-13/16	17/32	15- 1/2	2.3
BW- 40	1- 1/4 &	1- 5/8	2-11/32	35/64	3- 3/64	35/64	16- 1/8	2.5
BW- 41	1- 7/16 &	1- 5/8	2-13/16	9/16	3- 3/64	9/16	16- 5/8	2.7
BW- 41B	1- 1/2 &	1- 5/8	2-13/16	9/16	3- 3/64	9/16	16- 5/8	2.7
BW- 42	1- 7/16 &	1-13/16	3- 5/8	7/8	4- 1/8	7/8	17	5.7
BW- 42A	1- 1/2 &	1-11/16	3- 5/8	7/8	4- 1/8	7/8	17	5.8
BW- 43	1- 5/8 &	1-13/16	3- 5/8	7/8	4- 1/8	7/8	17	5.8
BW- 44	1- 5/8 &	2	4- 1/8	15/16	4- 5/8	15/16	19	7.8
BW- 44A	1-11/16 &	1- 7/8	4- 1/8	15/16	4- 5/8	15/16	19	7.3
BW- 45	1-13/16 &	2	4- 1/8	15/16	4- 5/8	15/16	19	7.1
BW- 45A	1- 7/8 &	2- 1/16	4- 1/8	15/16	4- 5/8	15/16	19	6.7
BW- 47	2	2- 3/16	4- 9/16	1	5- 1/8	1	21	9.3
BW- 47B	2- 1/16 &	2- 1/4	4- 9/16	1	5- 1/8	1	21	9.3
BW- 48	2	2- 3/8	4- 7/8	1- 1/16	5- 1/2	1- 1/16	23	13.
BW- 49	2- 3/16 &	2- 3/8	4- 7/8	1- 1/16	5- 1/2	1- 1/16	23	11.9
BW- 49A	2- 1/4 &	2- 7/16	4- 7/8	1- 1/16	5- 1/2	1- 1/16	23	12.2
BW- 51	2- 3/8 &	2- 9/16	5-11/16	1- 1/16	5-15/16	1- 1/8	25	13.3
BW- 51A	2- 7/16 &	2- 5/8	5-11/16	1- 1/16	5-15/16	1- 1/8	25	13.3
BW- 53	2- 9/16 &	2- 3/4	5-15/16	1- 1/8	6- 3/8	1- 7/32	27	16.7
BW- 53A	2- 5/8 &	2-13/16	5-15/16	1- 1/8	6- 3/8	1- 7/32	27	16.5
BW- 54C	2- 3/4 &	2-15/16	5-15/16	1- 1/8	7- 1/4	1- 3/8	30	23.8
BW- 55A	2-13/16 &	3	6- 3/8	1- 7/32	7- 1/4	1- 3/8	32	25.
BW- 55B	2-15/16 &	3- 1/8	6- 3/8	1- 7/32	7- 1/4	1- 3/8	32	25.
BW- 57B	3-3/8 &	3- 3/8	7- 1/8	1- 3/8	8	1-17/32	36	36.
BW- 57	3- 1/8 &	3- 1/2	7- 1/8	1- 3/8	8	1-17/32	36	37.
BW- 58A	3- 3/8 &	3- 3/4	8	1-19/32	8- 3/4	1- 5/8	38	48.5
BW- 58	3- 1/2 &	3- 7/8	8	1-19/32	8- 3/4	1- 5/8	38	46.
BW- 60A	3- 3/4 &	4- 1/8	8- 3/4	1- 5/8	8- 3/4	1- 5/8	40	48.
BW- 60	3- 7/8 &	4- 1/4	8- 3/4	1- 5/8	8- 3/4	1- 5/8	40	48.
BW- 62A	4- 1/8 &	4- 1/2	8- 3/4	1- 5/8	10- 1/4	1- 7/8	43	67.
BW- 62	4- 1/4 &	4- 5/8	8- 3/4	1- 5/8	10- 1/4	1- 7/8	43	67.
BW- 63A	4- 5/8 &	5	10- 1/4	1- 7/8	10- 1/4	1- 7/8	47	76.
BW- 64A	5	5- 3/8	10- 1/4	1- 7/8	12- 3/8	2- 1/2	47	118.

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

CHECK NUT (THIN) WRENCHES

INDUSTRIAL BLACK FINISH
SINGLE HEAD—15° ANGLE

For Check, Jam, or Lock Nuts, etc.

Drop-forged and heat-treated. Smooth finish. This class of wrench is guaranteed amply strong for its intended purpose, but is not designed for severe service.

Example of Order Nomenclature: "606B WRENCH"

No.	Nominal Opening	Head		Overall Length	Weight Ea., Lbs.
		Width	Thickness		
601A	7/16	1-1/8	5/32	4	.08
601	1/2	1-1/8	5/32	4	.08
602A	9/16	1-11/32	11/64	4-1/2	.12
603A	5/8	1-9/16	3/16	5-1/16	.16
603	11/16	1-9/16	3/16	5-1/16	.16
604A	3/4	1-27/32	7/32	5-15/16	.23
604	25/32	1-27/32	7/32	5-15/16	.23
605A	13/16	2-1/16	1/4	6-11/16	.33
605	7/8	2-1/16	1/4	6-11/16	.33
606	15/16	2-1/4	9/32	7-1/2	.48
606B	1	2-1/4	9/32	7-1/2	.48
607	1-1/16	2-1/2	5/16	8-1/2	.66
607A	1-1/8	2-1/2	5/16	8-1/2	.66
608	1-1/4	2-15/16	3/8	10	1.1
608A	1-5/16	2-15/16	3/8	10	1.1
609	1-7/16	3-1/4	7/16	11-5/8	1.6
609A	1-1/2	3-1/4	7/16	11-5/8	1.6
610	1-5/8	3-3/4	1/2	13-1/4	2.5
610A	1-11/16	3-3/4	1/2	13-1/4	2.5

WILLIAMS

CHECK NUT (THIN) WRENCHES

INDUSTRIAL BLACK FINISH
DOUBLE HEAD—15° ANGLE

For Check, Jam, or Lock Nuts, etc.

Drop-forged and heat-treated. Smooth finish. This class of wrench is guaranteed amply strong for its intended purpose, but is not designed for severe service.

Example of Order Nomenclature: "630E WRENCH"

No.	Nominal Openings	Small Head		Large Head		Overall Lgth.	Wgt. Each, Lbs.
		Width	Thick.	Width	Thick.		
623D	7/16 & 1/2	1	5/32	1-1/8	5/32	4-5/8	.08
624A	7/16 & 9/16	1-3/32	5/32	1-11/32	5/32	4-3/4	.11
624B	1/2 & 9/16	1-3/32	5/32	1-11/32	5/32	4-3/4	.11
626S	9/16 & 5/8	1-5/16	3/16	1-1/2	3/16	6	.17
627	19/32 & 11/16	1-5/16	3/16	1-1/2	3/16	6	.19
629D	5/8 & 3/4	1-1/2	3/16	1-23/32	3/16	6-3/4	.23
630E	3/4 & 7/8	1-3/4	7/32	1-7/8	7/32	7-1/2	.33
631	25/32 & 7/8	1-3/4	7/32	1-7/8	7/32	7-1/2	.34
631A	13/16 & 7/8	1-3/4	7/32	1-7/8	7/32	7-1/2	.34
632C	7/8 & 15/16	2-5/32	1/4	2-5/16	1/4	8-7/8	.59
634A	7/8 & 1	2-5/32	1/4	2-5/16	1/4	8-7/8	.59
634	7/8 & 1-1/16	2-5/32	1/4	2-5/16	1/4	8-7/8	.54
632X	15/16 & 1	2-5/32	1/4	2-5/16	1/4	8-7/8	.57
634B	15/16 & 1-1/16	2-5/32	1/4	2-5/16	1/4	8-7/8	.59
635D	1 & 1-1/8	2-7/16	9/32	2-11/16	9/32	10-1/2	.95
637	1-1/16 & 1-1/4	2-7/16	9/32	2-11/16	9/32	10-1/2	.89
637A	1-1/8 & 1-5/16	2-7/16	9/32	2-11/16	9/32	10-1/2	.89
639	1-1/4 & 1-7/16	2-11/16	3/8	3-15/32	3/8	12-1/2	1.7
640	1-1/4 & 1-5/8	2-11/16	3/8	3-15/32	3/8	12-1/2	1.8
640A	1-5/16 & 1-1/2	2-11/16	3/8	3-15/32	3/8	12-1/2	1.6



ADJUSTABLE CONSTRUCTION WRENCH

INDUSTRIAL BLACK FINISH



New design construction wrench with the exclusive Williams D-Hole design adjustable head. Long handle is round for most of its length, with tapered end. Drop-forged and heat-treated. Smooth finish.

No.	Capacity Inches	Overall Length	Thickness Head		Wgt. Each Lbs.
			Jaw Tip	Extreme	
ABCN-12	1-1/2	15 inches	15/32	23/32	2.3

REPLACEMENT PARTS

Jaw No.	*Set No.	*Parts set consists of one each Knurl, Pin and Spring.
AB-12-1	AP-12-2	

CONSTRUCTION RATCHET

INDUSTRIAL BLACK FINISH

1/2 INCH SQ. DRIVE



The BS-56C Construction Ratchet has a long, round handle with tapered end, 4 inches long for aligning bolt holes of various diameters. Can be used with Supersockets listed on page 25 or black finish Power Drive Sockets listed on pg. 78.

No.	Description	Wgt. Ea., Lbs.
BS-56C	Reversible Construction Ratchet—13" long	1.4

WILLIAMS SET SCREW WRENCHES

INDUSTRIAL BLACK FINISH

SINGLE HEAD—22 1/2° ANGLE

For Set Screws, Square Cap Screws and Nuts



Drop-forged, heat-treated. Smooth finish.

Example of Order Nomenclature: "504 WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE VIII, CLASS 1, OPEN END, SINGLE HEAD 22 1/2°

No.	Nominal Opening	Head		Overall Length	Weight Ea., Lbs.
		Width	Thickness		
500	3/16	21/32	7/32	3	.04
501	1/4	7/8	9/32	3-1/2	.09
502	5/16	1- 1/16	11/32	4-1/4	.16
503	3/8	1- 1/4	3/8	5	.25
504	7/16	1- 7/16	13/32	5-3/4	.36
505	1/2	1- 5/8	15/32	6-5/8	.50
506	9/16	1-13/16	17/32	7-1/2	.75
507	5/8	2	19/32	8-1/2	.89
508	3/4	2- 1/4	21/32	9-1/2	1.3
509	7/8	2- 1/2	23/32	10-1/2	1.5
510	1	2- 3/4	25/32	11-1/2	2.1

CONSTRUCTION WRENCHES

INDUSTRIAL BLACK FINISH

15° ANGLE



Deep opening provides substantial bearing on hex and square nuts. The long handle is round for the greater part of its length, with tapered end. Drop-forged and heat-treated. Smooth finish.

Example of Order Nomenclature: "206B WRENCH"

No.	Nominal Opening	Head		Overall Length	Weight Ea., Lbs.
		Width	Thickness		
201A	7/16	1- 1/4	11/32	9-1/2	.27
201	1/2	1- 1/4	11/32	9-1/2	.27
201B	9/16	1- 1/4	11/32	9-1/2	.27
202	19/32	1- 1/4	11/32	9-1/2	.27
203A	5/8	1-11/16	7/16	12	.53
203	11/16	1-11/16	7/16	12	.53
204A	3/4	1-11/16	7/16	12	.50
204	25/32	1-11/16	7/16	12	.50
205A	13/16	2- 3/32	17/32	14-1/2	1.
205	7/8	2- 3/32	17/32	14-1/2	1.
206	15/16	2- 3/32	17/32	14-1/2	1.
206B	1	2- 3/32	17/32	14-1/2	1.
207	1- 1/16	2- 1/2	5/8	17	1.7
207A	1- 1/8	2- 1/2	5/8	17	1.7
208	1- 1/4	2- 7/8	11/16	19	2.6
208A	1- 5/16	2- 7/8	11/16	19	2.6
209	1- 7/16	3- 5/16	3/4	21	3.7
209A	1- 1/2	3- 5/16	3/4	21	3.7
210	1- 5/8	3- 5/8	27/32	23	5.3
210A	1-11/16	3- 5/8	27/32	23	5.2
211	1-13/16	4- 1/4	15/16	25	7.3
211A	1- 7/8	4- 1/4	15/16	25	7.2
212	2	4- 1/4	15/16	25	7.3

WILLIAMS SET SCREW WRENCHES

INDUSTRIAL BLACK FINISH

DOUBLE HEAD—22 1/2° ANGLE

For Set Screws, Square Cap Screws and Nuts



Drop-forged, heat-treated. Smooth finish.

Example of Order Nomenclature: "531 WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE VII, SET SCREW WR., DBL. HEAD, OPEN END, 22 1/2°

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Ea., Lbs.
		Width	Thick.	Width	Thick.		
523	3/16 & 1/4	21/32	1/4	7/8	1/4	3- 1/2	.06
524	3/16 & 5/16	7/8	5/16	1- 1/16	5/16	4- 1/4	.13
525	1/4 & 5/16	7/8	5/16	1- 1/16	5/16	4- 1/4	.14
526	1/4 & 3/8	1- 1/16	3/8	1- 1/4	3/8	5	.20
527	5/16 & 3/8	1- 1/16	3/8	1- 1/4	3/8	5	.23
529	3/8 & 7/16	1- 1/4	13/32	1- 7/16	13/32	5- 3/4	.33
530	3/8 & 1/2	1- 7/16	15/32	1- 5/8	15/32	6- 5/8	.52
531	7/16 & 1/2	1- 7/16	15/32	1- 5/8	15/32	6- 5/8	.50
533	1/2 & 9/16	1- 5/8	17/32	1-13/16	17/32	7- 1/2	.71
534	1/2 & 5/8	1-13/16	19/32	2	19/32	8- 1/2	1.
535	9/16 & 5/8	1-13/16	19/32	2	19/32	8- 1/2	1.95
537	5/8 & 3/4	2	21/32	2- 1/4	21/32	9- 3/4	1.5
539	3/4 & 7/8	2- 1/4	23/32	2- 1/2	23/32	11	2.6
541	7/8 & 1	2- 1/2	25/32	2- 3/4	25/32	12- 1/2	2.6

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



BOX-OPEN END WRENCHES

INDUSTRIAL BLACK FINISH
LONG COMBINATION — 15° ANGLE



Drop-forged from Selected Steel and heat-treated. Smooth finish. Box end, with 12-point opening, is offset from plane of handle, same size opening in both heads.

Example of Order Nomenclature: "BXOE-28 WRENCH"

No.	Nominal Openings	Open End		Box End		Overall Length	Wgt. Each, Lbs.
		Width	Thick.	Diam.	Thick.		
BXOE-12	3/8 & 3/8	51/64	13/64	37/64	1/4	6	.08
BXOE-14	7/16 & 7/16	29/32	7/32	21/32	5/16	6- 5/8	.13
BXOE-16	1/2 & 1/2	1- 1/32	1/4	47/64	21/64	7- 3/16	.16
BXOE-18	9/16 & 9/16	1- 5/32	9/32	53/64	11/32	7-15/16	.21
BXOE-20	5/8 & 5/8	1- 9/32	19/64	59/64	3/8	8- 3/4	.29
BXOE-22	11/16 & 11/16	1-13/32	5/16	1- 1/64	13/32	9- 5/8	.35
BXOE-24	3/4 & 3/4	1-17/32	11/32	1- 3/32	7/16	10- 5/8	.46
BXOE-26	13/16 & 13/16	1- 5/8	23/64	1-11/64	15/32	11- 9/16	.56
BXOE-28	7/8 & 7/8	1- 3/4	3/8	1- 1/4	1/2	12-11/16	.69
BXOE-30	15/16 & 15/16	1-55/64	25/64	1-21/64	9/16	13- 7/8	.85
BXOE-32	1 & 1	1-31/32	13/32	1-27/64	5/8	15- 1/8	1.
BXOE-34	1-1/16 & 1-1/16	2- 3/32	27/64	1- 1/2	43/64	16- 1/4	1.3
BXOE-36	1-1/8 & 1-1/8	2- 7/32	7/16	1- 9/16	21/32	17- 7/16	1.5
BXOE-40	1-1/4 & 1-1/4	2-15/32	15/32	1-25/32	3/4	18-11/16	1.9

WILLIAMS HEAVY "S" or CAR WRENCHES

INDUSTRIAL BLACK FINISH
DOUBLE HEAD—22½° ANGLE



Drop-forged and heat-treated. Smooth finish.

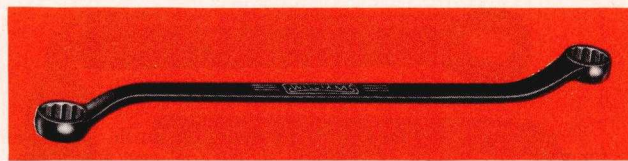
Example of Order Nomenclature: "370B WRENCH"

No.	Nominal Openings	Small Head		Large Head		Overall Lgth.	Wgt. Each, Lbs.
		Width	Thick.	Width	Thick.		
367A	5/8 & 13/16	1-15/16	7/16	2-11/32	7/16	12	1.4
367	11/16 & 7/8	1-15/16	7/16	2-11/32	7/16	12	1.4
370C	13/16 & 7/8	2-15/32	1/2	2-25/32	1/2	19	2.7
370A	13/16 & 1	2-15/32	1/2	2-25/32	1/2	19	2.6
370	7/8 & 1- 1/16	2-15/32	1/2	2-25/32	1/2	19	2.6
370B	1 & 1- 1/8	2-15/32	1/2	2-25/32	1/2	19	2.5
372A	1- 1/16 & 1- 1/4	2-25/32	1/2	3- 9/64	1/2	20	3.3
373	1- 1/8 & 1- 5/16	2-25/32	1/2	3- 9/64	1/2	20	3.1
376A	1- 1/4 & 1- 7/16	3- 9/64	9/16	3- 9/16	9/16	21	4.2
376	1- 5/16 & 1- 1/2	3- 9/64	9/16	3- 9/16	9/16	21	4
378A	1- 7/16 & 1- 5/8	3- 9/16	9/16	3-31/32	9/16	22	4.9
379	1- 1/2 & 1-11/16	3- 9/16	9/16	3-31/32	9/16	22	4.7
382A	1- 5/8 & 1-13/16	3-31/32	5/8	4- 1/4	5/8	23	6.3
382	1-11/16 & 1- 7/8	3-31/32	5/8	4- 1/4	5/8	23	6.1
383B	1- 7/8 & 2- 1/4	4- 3/16	5/8	4-19/32	5/8	24	6.5
385	1-13/16 & 2	4- 3/16	5/8	4-19/32	5/8	24	6.7

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

12-POINT BOX WRENCHES

INDUSTRIAL BLACK FINISH
LONG DOUBLE OFFSET PATTERN



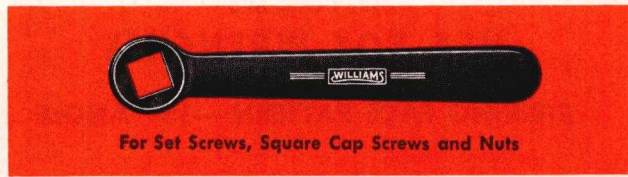
Drop-forged from Selected Steel and heat-treated. Smooth finish.

Example of Order Nomenclature: "BXX-2024 WRENCH"

No.	Nominal Openings	Small Head		Large Head		Overall Length	Wgt. Each, Lbs.
		Diam.	Thick.	Diam.	Thick.		
BXX-1214	3/8 & 7/16	37/64	1/4	21/32	9/32	7- 3/4	.13
BXX-1416	7/16 & 1/2	21/32	19/64	47/64	21/64	8- 1/16	.21
BXX-1618	1/2 & 9/16	47/64	21/64	53/64	11/32	8-11/16	.25
BXX-1820	9/16 & 5/8	53/64	11/32	29/32	3/8	9- 3/8	.27
BXX-2024	5/8 & 3/4	29/32	13/32	1- 5/64	7/16	10- 1/8	.42
BXX-2224	11/16 & 3/4	1	13/32	1- 5/64	7/16	10- 1/2	.44
BXX-2428	3/4 & 7/8	1- 5/64	15/32	1- 1/4	1/2	12	.58
BXX-2628	13/16 & 7/8	1-11/64	1/2	1- 1/4	17/32	12- 7/8	.71
BXX-3032	15/16 & 1	1-21/64	37/64	1-13/32	5/8	14- 3/8	.98
BXX-3436	1-1/16 & 1-1/8	1- 1/2	43/64	1- 9/16	23/32	16- 5/8	1.4
BXX-3440	1-1/16 & 1-1/4	1- 1/2	11/16	1-25/32	3/4	17- 1/4	1.8

WILLIAMS SQUARE-BOX WRENCHES

INDUSTRIAL BLACK FINISH
SINGLE HEAD — 22½° ANGLE



For Set Screws, Square Cap Screws and Nuts

Drop-forged, heat-treated. Smooth finish.

Can be made to order with 8-point openings, at an additional charge.

Example of Order Nomenclature: "585 WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE VIII, CLASS 2, 8-POINT, BOX, SET SCREW, S.H. 22½°

No.	Nominal Opening	Head		Overall Length	Weight Ea., Lbs.
		Diameter	Thickness		
580	3/16	1/2	1/4	3	.05
581	1/4	5/8	9/32	3-3/8	.08
582	5/16	11/16	5/16	3-3/4	.11
583	3/8	27/32	3/8	4-1/4	.17
584	7/16	31/32	7/16	4-7/8	.25
585	1/2	1- 1/16	15/32	5-1/2	.33
586	9/16	1- 3/16	1/2	6-1/4	.42
587	5/8	1- 5/16	9/16	7	.61
588	3/4	1- 9/16	5/8	8	.83
589	7/8	1-25/32	11/16	9	1.2
590	1	2	3/4	10	1.6



HEX-BOX WRENCHES

INDUSTRIAL BLACK FINISH
REGULAR PATTERN—15° ANGLE



Drop-forged and heat-treated. Smooth finish. Designed for use requiring an exceedingly strong tool and where head clearance is limited. Wrenches larger than No. 810 have tapered handle.

Handle can be bent above head at angles of 45° to 90° from opening, at an additional charge.

Example of Order Nomenclature: "808A WRENCH"

No.	Nominal Opening Across Flats	Head		Overall Length	Weight Ea., Lbs.
		Diameter	Thickness		
800	13/32	45/64	7/32	3-1/2	.08
801A	7/16	27/32	17/64	4	.11
801	1/2	27/32	17/64	4	.11
802A	9/16	61/64	5/16	4-7/8	.17
803A	5/8	1- 3/32	23/64	5-7/8	.25
803	11/16	1- 3/32	23/64	5-7/8	.25
804A	3/4	1- 1/4	13/32	6-7/8	.38
805	7/8	1-23/64	29/64	7-3/4	.52
806	15/16	1-35/64	1/2	8-3/4	.69
806B	1	1-35/64	1/2	8-3/4	.69
807	1- 1/16	1-25/32	9/16	9-7/8	.95
807A	1- 1/8	1-25/32	9/16	9-7/8	.95
808	1- 1/4	2- 1/16	9/16	11-1/2	1.4
808A	1- 5/16	2- 1/16	9/16	11-1/2	1.4
809	1- 7/16	2- 3/8	21/32	13-3/8	2.
809A	1- 1/2	2- 3/8	21/32	13-3/8	2.
810	1- 5/8	2- 5/8	3/4	15-1/4	2.9
810A	1-11/16	2- 5/8	3/4	15-1/4	2.9
811	1-13/16	2-29/32	13/16	17-1/8	3.1
811A	1- 7/8	2-29/32	13/16	17-1/8	3.1
812	2	3- 1/4	15/16	19	4.3
813	2- 3/16	3- 1/2	1	21	5.8
813A	2- 1/4	3- 1/2	1	21	5.8
814	2- 3/8	3- 3/4	1-1/16	23	7.3
815	2- 9/16	4- 1/8	1-1/8	25	8.9
815A	2- 5/8	4- 1/8	1-1/8	25	8.9
816	2- 3/4	4- 9/16	1-1/4	27	11.9
817A	3	4-13/16	1-3/8	30	16.2
817	3- 1/8	4-13/16	1-3/8	30	16.2
818A	3- 3/8	5- 1/4	1-1/2	34	20.3
818	3- 1/2	5- 1/4	1-1/2	34	20.3
819B	3- 3/4	5- 7/8	1-5/8	38	24.6
819	3- 7/8	5- 7/8	1-5/8	38	24.5
819AC	4- 1/8	6- 1/2	1-3/4	42	34.8
819A	4- 1/4	6- 1/2	1-3/4	42	34.5
820B	4- 1/2	7	1-7/8	46	41.5
820	4- 5/8	7	1-7/8	46	41.5

WILLIAMS

HEX-BOX WRENCHES

INDUSTRIAL BLACK FINISH
STRIKING FACE PATTERN—15° ANGLE



Designed for heavy work in close quarters where large nuts must be set up tight, or frozen nuts loosened.

Drop-forged and heat-treated. Smooth finish.

Example of Order Nomenclature: "SF-819A WRENCH"

MILITARY DESCRIPTION:
GGG-W-636D-5, TYPE XI, STYLE 2, SLUGGING WRENCH

No.	Nominal Opening Across Flats	Head		Overall Length	Weight Ea., Lbs.
		Diameter	Thickness		
SF-818A	3-3/8	5-1/4	1-1/2	18	19.3
SF-818	3-1/2	5-1/4	1-1/2	18	18.8
SF-819B	3-3/4	5-7/8	1-5/8	19	23.6
SF-819	3-7/8	5-7/8	1-5/8	19	23.6
SF-819AC	4-1/8	6-1/2	1-3/4	20	25.3
SF-819A	4-1/4	6-1/2	1-3/4	20	25.3
SF-820B	4-1/2	7	1-7/8	21	29.5
SF-820	4-5/8	7	1-7/8	21	29.5

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

HEX-BOX WRENCHES

INDUSTRIAL BLACK FINISH
HEAVY PATTERN—15° ANGLE



Drop-forged and heat-treated. Smooth finish. Designed for use requiring an exceedingly strong tool and where head clearance is limited. Wrenches larger than No. H809 have tapered handle.

Handle can be bent above head at angles of 45° to 90° from opening, at an additional charge.

Example of Order Nomenclature: "H-811A WRENCH"

No.	Nominal Opening Across Flats	Head		Overall Length	Weight Ea., Lbs.
		Diameter	Thickness		
H-808	1- 1/4	2- 1/16	13/16	11-1/2	1.6
H-809	1- 7/16	2- 3/8	15/16	13-3/8	2.5
H-809A	1- 1/2	2- 3/8	15/16	13-3/8	2.5
H-810	1- 5/8	2- 5/8	1-1/8	15-1/4	3.1
H-811	1-13/16	2-15/16	1-1/4	17	3.8
H-811A	1- 7/8	2-15/16	1-1/4	17	3.8
H-812	2	3- 1/4	1-3/8	19	5.2
H-813	2- 3/16	3- 1/2	1-1/2	21	6.5
H-813A	2- 1/4	3- 1/2	1-1/2	21	6.5
H-814	2- 3/8	3- 3/4	1-5/8	23	8.3
H-815	2- 9/16	4- 1/8	1-3/4	25	10.3
H-815A	2- 5/8	4- 1/8	1-3/4	25	10.3
H-816	2- 3/4	4- 9/16	1-7/8	27	13.8
H-817A	3	4-13/16	2	30	17.9
H-817	3- 1/8	4-13/16	2	30	17.9

WILLIAMS

TOOL POST WRENCHES

INDUSTRIAL BLACK FINISH



FOR SET SCREWS

Drop-forged, heat-treated. Smooth finish, head faces polished.

No.	Open End for Set Screw; Size	Closed End for Set Screw; Size	Head Thickness	Overall Length	Weight Ea., Lbs.
554	7/16	7/16	1/2	5-1/2	.45
555	1/2	1/2	9/16	6	.56
555C	9/16	9/16	9/16	6	.56
556	5/8	5/8	5/8	7	.80
557	3/4	3/4	11/16	7-5/8	.94

WILLIAMS

TOOL POST WRENCHES

INDUSTRIAL BLACK FINISH



For Nuts and Set Screws

Jaws of open end have opening angle of 15°. Box end opening is offset 15° from plane of handle.

Example of Order Nomenclature: "564 WRENCH"

No.	Open End			Box End			Overall Length	Wgt. Ea., Lbs.
	Nominal Opng.	Head		Nominal Opng.	Head			
		Width	Thick.		Diam.	Thick.		
562A	3/4	1-37/64	5/16	9/16	1- 9/32	9/16	8-3/4	.44
563B	7/8	1-51/64	11/32	1/2	1- 7/16	5/8	9-1/4	.56
563D	7/8	1-51/64	11/32	5/8	1- 7/16	5/8	9-1/4	.56
563E	7/8	1-51/64	11/32	3/4	1- 7/16	5/8	9-1/4	.56
564	1-1/16	2- 1/64	3/8	5/8	1-19/32	11/16	9-7/8	.70
565	1-1/16	2- 3/16	7/16	3/4	1-25/32	3/4	10-3/4	1.
566	1-1/4	2- 3/16	7/16	3/4	1-25/32	3/4	10-3/4	1.



TEE-HANDLE SOCKET WRENCHES

INDUSTRIAL BLACK FINISH



Drop-forged and heat-treated. Smooth finish.
Special broaching to order in reasonable quantities.
Hexagon end of shank is designed for use in combination with another wrench. Pin-Handle can be removed by driving through.

Wrenches of shorter or longer lengths than stated in table can be furnished to order in quantities.

Example of Order Nomenclature: "970S WRENCH"

MILITARY DESCRIPTION:
GGG-W-641D-3, TYPE 1, CLASS 2, SOCKET, TEE HANDLE WRENCH

No.	Nominal Opening Across Flats	Head Diameter	Overall Length	Weight Ea., Lbs.
HEXAGON OPENINGS				
961A	5/16	1/2	4-1/4	.13
962D	3/8	5/8	4-1/2	.22
963D	7/16	11/16	4-7/8	.30
964A	1/2	3/4	5-1/4	.31
965D	9/16	7/8	5-3/4	.45
965A	19/32	7/8	5-3/4	.45
966D	5/8	1	6-1/8	.63
967A	11/16	1-1/8	6-1/2	.92
967D	3/4	1-1/8	6-1/2	.92
968D	13/16	1-1/4	7	1.1
969A	7/8	1-3/8	7-3/8	1.3
970S	15/16	1-1/2	7-7/8	1.6
970D	1	1-1/2	7-7/8	1.6
971A	1- 1/16	1-5/8	8-1/4	1.9
971D	1- 1/8	1-5/8	8-1/4	1.9
973A	1- 1/4	1-7/8	9-1/8	2.9
973B	1- 5/16	1-7/8	9-1/8	2.9
975A	1- 7/16	2-1/8	10	4.2
975D	1- 1/2	2-1/8	10	4.2
976A	1- 5/8	2-3/8	10-3/8	5.3
976B	1-11/16	2-3/8	10-3/8	5.3
977A	1-13/16	2-5/8	10-7/8	7.2
977B	1- 7/8	2-5/8	10-7/8	6.7
978A	2	2-7/8	11-3/8	6.8
979A	2- 3/16	3	11-7/8	8.7
979B	2- 1/4	3	11-7/8	8.7
980A	2- 3/8	3-5/16	12-1/2	11.
SQUARE OPENINGS				
961H	3/16	1/2	4-1/4	.13
961J	1/4	1/2	4-1/4	.13
962H	5/16	5/8	4-1/2	.22
963H	3/8	11/16	4-7/8	.30
965H	7/16	7/8	5-3/4	.45
966H	1/2	1	6-1/8	.63
967H	9/16	1-1/8	6-1/2	.92
968H	5/8	1-1/4	7	1.1
968P	11/16	1-1/4	7	1.1
969H	3/4	1-3/8	7-3/8	1.3
971H	7/8	1-5/8	8-1/4	1.9
973H	1	1-7/8	9-1/8	2.9
974H	1-1/8	2	9-1/2	3.5
976H	1-1/4	2-3/8	10-3/8	5.3
977X	1-7/16	2-5/8	10-7/8	7.2
977P	1-1/2	2-5/8	10-7/8	7.2

OFFSET SOCKET WRENCHES

INDUSTRIAL BLACK FINISH



Drop-forged and heat-treated. Smooth finish.

Special broaching to order in reasonable quantities.

These Offset Socket Wrenches, of shorter or longer lengths than stated in table, can be furnished to order in quantities.

Example of Order Nomenclature: "261J WRENCH"

MILITARY DESCRIPTION:
GGG-W-641D-3, TYPE 1, CLASS 1, SOCKET, TEE HANDLE WRENCH

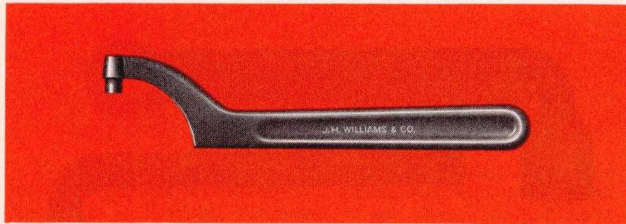
No.	Nominal Opening Across Flats	Handle Offset in Clear from Face of Wrench	Head Diameter	Overall Length	Weight Ea., Lbs.
HEXAGON OPENINGS					
261A	5/16	13/16	1/2	3-3/8	.08
262D	3/8	1	5/8	3-7/8	.17
263D	7/16	1- 1/16	11/16	4-5/16	.20
264A	1/2	1- 1/4	3/4	5-1/8	.22
265D	9/16	1- 7/16	7/8	5-7/8	.36
266D	5/8	1- 9/16	1	6-1/4	.50
267A	11/16	1- 5/8	1-1/8	6-3/4	.67
267D	3/4	1- 5/8	1-1/8	6-3/4	.67
268D	13/16	1-13/16	1-1/4	7-1/2	.94
269A	7/8	2	1-3/8	8-3/8	1.1
270S	15/16	2- 3/16	1-1/2	9-1/8	1.4
270D	1	2- 3/16	1-1/2	9-1/8	1.4
271A	1- 1/16	2- 3/8	1-5/8	10	1.8
271D	1- 1/8	2- 3/8	1-5/8	10	1.8
273A	1- 1/4	2- 3/4	1-7/8	11-5/8	2.7
273B	1- 5/16	2- 3/4	1-7/8	11-5/8	2.7
275A	1- 7/16	3- 1/8	2-1/8	13-1/4	4.1
275D	1- 1/2	3- 1/8	2-1/8	13-1/4	4.1
276A	1- 5/8	3- 1/2	2-3/8	14-7/8	5.1
276B	1-11/16	3- 1/2	2-3/8	14-7/8	5.1
277A	1-13/16	3- 7/8	2-5/8	16-1/2	6.6
277B	1- 7/8	3- 7/8	2-5/8	16-1/2	6.1
278A	2	4- 3/8	2-7/8	18-1/4	8.
279A	2- 3/16	4- 7/8	3	20	10.
279B	2- 1/4	4- 7/8	3	20	10.
280A	2- 3/8	5- 3/8	3-5/16	21-3/4	12.5
SQUARE OPENINGS					
261J	1/4	13/16	1/2	3-3/8	.08
262H	5/16	1	5/8	3-7/8	.17
263H	3/8	1- 1/16	11/16	4-5/16	.20
265H	7/16	1- 7/16	7/8	5-7/8	.36
266H	1/2	1- 9/16	1	6-1/4	.52
267H	9/16	1- 5/8	1-1/8	6-3/4	.70
268H	5/8	1-13/16	1-1/4	7-1/2	.95
268P	11/16	1-13/16	1-1/4	7-1/2	.92
269H	3/4	2	1-3/8	8-3/8	1.
271H	7/8	2- 3/8	1-5/8	10	1.9
273H	1	2- 3/4	1-7/8	11-5/8	2.7
274H	1- 1/8	2- 7/8	2	12-3/8	3.5
276H	1- 1/4	3- 1/2	2-3/8	14-7/8	5.7

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



PIN SPANNERS

INDUSTRIAL BLACK FINISH



Pins are forged integral with wrench. Surfaces smoothed, pins milled, hardened all over.

Example of Order Nomenclature: "459 SPANNER"

MILITARY DESCRIPTION:
GGG-W-665-B-1, TYPE II, GRADE A, PIN SPANNER

No.	For Circle; Diameter	Pin Size		Overall Length	Weight Ea., Lbs.
		Diameter	Length		
452	1	3/16	3/16	4	.08
453	1-1/4	13/64	13/64	4-1/2	.11
454	1-1/2	7/32	7/32	5	.13
455	1-3/4	15/64	15/64	5-1/2	.17
456	2	1/4	1/4	6	.20
457	2-1/4	17/64	17/64	6-1/2	.23
458	2-1/2	9/32	9/32	7	.31
459	2-3/4	19/64	19/64	7-1/2	.33
460	3	5/16	5/16	8	.44
461	3-1/4	21/64	21/64	8-1/2	.50
462	3-1/2	11/32	11/32	9	.56
463	3-3/4	23/64	23/64	9-1/2	.66
464	4	3/8	3/8	10	.70
466	5	7/16	7/16	12	1.3
468	6	1/2	1/2	14	1.9

WILLIAMS

FLAT HOOK SPANNERS



No.	For Circle; Diameter	Will finish for Circles; Diameter	Thick- ness	Overall Length	Weight Ea., Lbs.
403	1-1/4	1 to 1-1/4	7/32	4-3/4	.13
404	1-1/2	1-3/8 to 1-5/8	1/4	6	.25
405	2	1-3/4 to 2	1/4	7-1/8	.38
406	2-1/4	2-1/8 to 2-3/8	1/4	8-7/16	.48
407	2-5/8	2-1/2 to 2-3/4	1/4	9-3/4	.64
408	3-1/8	2-7/8 to 3-1/4	5/16	11	.98
409	3-3/4	3-3/8 to 3-7/8	5/16	12	1.2
410	4-3/8	4 to 4-1/2	5/16	13	1.3
412	5-3/4	5-1/4 to 5-3/4	7/16	15	2.6

WILLIAMS

LIGHT HOOK SPANNERS



† Length of handle can be varied if desired.

No.	For Circle; Diameter	Hook			Diameter Handle	Overall †Length	Wgt. Ea., Lbs.
		Length	Width	Thickness			
491	1-3/16	1/16	3/8	7/32	3/8	6-1/2	.20
493	1-3/4	1/8	3/8	7/32	3/8	7-1/2	.22
494	2-1/8	1/8	3/8	7/32	3/8	8	.23
495	2-1/2	1/8	3/8	7/32	3/8	8-1/4	.23
496	2-3/4	1/8	3/8	7/32	3/8	8-1/2	.25
497	3	1/8	3/8	7/32	3/8	8-3/4	.25
498	3-1/2	1/8	3/8	7/32	3/8	9	.27

FACE SPANNERS

INDUSTRIAL BLACK FINISH



Pins are forged integral with wrench. Surfaces smoothed, pins milled, hardened all over.

Example of Order Nomenclature: "428 SPANNER"

MILITARY DESCRIPTION:
GGG-W-665-B-1, TYPE III, CLASS 2, NON ADJUSTABLE FACE SPANNER

No.	Pins			Span of Jaws in Clear	Length from Center of Pins	Thick- ness	Weight Ea., Lbs.
	Distance C to C	Diam. Milled	Length				
418	1	3/16	3/16	11/16	4-1/2	3/16	.13
420	1-1/4	7/32	7/32	7/8	5	3/16	.17
422	1-1/2	7/32	7/32	1- 1/8	5-1/2	3/16	.20
424	1-3/4	7/32	7/32	1- 3/8	6	7/32	.28
426	2	1/4	1/4	1-19/32	6-1/2	7/32	.30
428	2-1/4	1/4	1/4	1-27/32	7	7/32	.42
430	2-1/2	9/32	9/32	2- 1/32	7-1/2	1/4	.52
432	2-3/4	9/32	9/32	2- 9/32	8	1/4	.59
434	3	5/16	5/16	2- 1/2	8-1/2	1/4	.70
436	3-1/4	5/16	5/16	2- 3/4	9-1/8	1/4	.82
438	3-1/2	5/16	5/16	3	9-3/4	1/4	.89
440	3-3/4	3/8	3/8	3- 3/16	10-3/8	1/4	1.
442	4	3/8	3/8	3- 7/16	11	1/4	1.1

WILLIAMS

ADJUSTABLE FACE SPANNERS

INDUSTRIAL BLACK FINISH



A desirable and dependable tool for service where Center to Center dimensions vary. Pins milled, surfaces smooth, hardened.

Example of Order Nomenclature: "483 SPANNER"

MILITARY DESCRIPTION:
GGG-W-665-B-1, TYPE III, CLASS 1, ADJUSTABLE FACE SPANNER

No.	Extreme Capacity	Pin Size		Overall Length	Weight Ea., Lbs.
		Diameter	Length		
482	2	3/16	7/32	6-3/8	.33
483	3	1/4	9/32	8-1/4	.59
484	4	5/16	11/32	10-3/8	1.



ADJUSTABLE PIN SPANNERS

INDUSTRIAL BLACK FINISH



WITH ROUND PINS

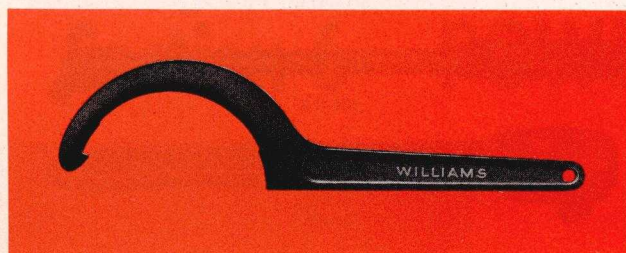
Used for adjusting collars, lock nuts, rings, etc., used on various types of machine tool equipment. Surfaces smoothed, alloy steel jaw hardened and tempered.

Example of Order Nomenclature: "O-472A SPANNER"

No.	Capacity for Circles, Diameter	Thickness		Pin Size		Overall Length	Weight Ea., Lbs.
		Handle	Hook	Diam.	Length		
O-471	3/4 to 2	1/4	11/32	1/8	1/8	6-3/8	.27
O-471A	3/4 to 2	1/4	11/32	3/16	5/32	6-3/8	.27
O-472	1-1/4 to 3	9/32	13/32	3/16	3/16	8-1/8	.50
O-472A	1-1/4 to 3	9/32	13/32	1/4	7/32	8-1/8	.50
O-474	2 to 4-3/4	5/16	15/32	1/4	1/4	11-3/8	.99
O-474A	4-1/2 to 6-1/4	5/16	15/32	3/8	1/4	12-1/8	1.1

WILLIAMS HOOK SPANNERS

INDUSTRIAL BLACK FINISH



Made especially to service Face Plate Draw Nuts used on taper-nose spindles for new design lathes. Very efficient, also, for general work. Supplied with bearing pads and hook machined, fully hardened.

Example of Order Nomenclature: "412LS SPANNER"

*Can be furnished to order for circle 1/8" larger.

No.	For Circle; Diameter	For Lathe Spindle No.	Thickness, Hook End	Overall Length	Weight Ea., Lbs.
410LS	4-15/32	00	5/16	13	1.3
412LS	5- 1/2	0	7/16	15	2.3
414	* 7- 3/8	1	5/8	20	4.1
415	* 9- 1/4	2	11/16	23-1/4	5.7
416	*12- 1/2	3	3/4	30-3/4	8.7

ADJUSTABLE HOOK SPANNERS

INDUSTRIAL BLACK FINISH



Surfaces smoothed, jaw hardened and tempered. Especially serviceable on spindle bearings of lathes, milling machines and grinding machines.

Example of Order Nomenclature: "474B SPANNER"

MILITARY DESCRIPTION:
GGG-W-665-B-1, TYPE I, CLASS 1, ADJUSTABLE HOOK SPANNER

No.	Capacity for Circles, Diameter	Thickness		Depth Hook	Overall Length	Weight Ea., Lbs.
		Handle	Hook			
471	3/4 to 2	1/4	11/32	1/8	6-3/8	.28
472	1-1/4 to 3	9/32	13/32	5/32	8-1/8	.52
474	2 to 4-3/4	5/16	15/32	3/16	11-3/8	.95
474A	4-1/2 to 6-1/4	5/16	15/32	1/4	12-1/8	1.1
474B	6-1/8 to 8-3/4	5/16	15/32	5/16	13-3/4	1.4

WILLIAMS ADJUSTABLE HOOK SPANNER SET

SET No. WS-401B

4 Wrenches in Cardboard Box
Weight, 3 lbs.

This type of spanner wrench is particularly serviceable on spindle bearings of lathes, milling and grinding machines.



One Ea.	Capacity for Circles, Diameter	One Ea.	Capacity for Circles, Diameter
471	3/4" to 2"	474	2" to 4 3/4"
472	1 1/4" to 3"	474A	4 1/2" to 6 1/4"

WILLIAMS BULL DOG WRENCHES

INDUSTRIAL BLACK FINISH



Will grip round, square, hexagon or any shape that will fit between their tough jaws. Drop-forged and heat-treated.

Example of Order Nomenclature: "BWB-4 1/2 BULLDOG"

No.	Capacity		Overall Length	Weight Ea., Lbs.
	Pipe	Rounds		
BWB-1	1/8 to 3/8	1/4 to 3/4	5-1/2	.25
BWB-2	1/4 to 3/4	1/2 to 1	9	.86
BWB-2-1/2	3/8 to 1	5/8 to 1-1/4	12-1/2	1.4
BWB-3	1/2 to 1-1/4	3/4 to 1-1/2	16	3.1
BWB-3-1/2	1/2 to 1-1/2	3/4 to 1-3/4	18-3/4	4.3
BWB-4	3/4 to 2	1 to 2-1/4	22	7.9
BWB-4-1/2	1 to 2-1/2	1-1/4 to 2-3/4	24	10.1
BWB-5	2 to 3	2-1/4 to 3-1/2	27	13.8
BWB-6	1/8 to 3/4	5/16 to 1	10	1.1



1/4 Inch SQ. DR. RATCHETS and DRIVERS

INDUSTRIAL BLACK FINISH SELECTED ALLOY STEEL



The mechanism used in Williams BM-56 1/4" Square Drive Ratchet is similar in design to that used in the BB-56 3/8" Square Drive and BS-56 1/2" Square Drive models. One principle difference is in the number of teeth broached in the head. In order to maintain Williams strength standards, 30 teeth are used in this "miniature" ratchet allowing a handle swing of only 12 degrees. The double-ended pawl has three teeth on each end. Use hand or power drive sockets listed on pages 18 and 76.

No.	Description	Wgt. Ea., Lbs.
BM-42A	Flex Handle—5-3/4" long, flexible head, knurled grip	.25
M-42RK	Repair Kit for BM-42A—Tang, Spring and Pin...	.03
BM-56	Reversible Ratchet—4-3/4" long, knurled grip....	.19
BM-56RK	Repair Kit for BM-56—Ring, Washer, Ratchet Unit	.05

1/2 Inch SQ. DR. RATCHETS and DRIVERS

INDUSTRIAL BLACK FINISH SELECTED ALLOY STEEL



Williams BS-56 and BS-56C 1/2" Square Drive Ratchets both have the same fine 41 tooth design as the BB-56 3/8" Square Drive Ratchet described in the upper right hand column.

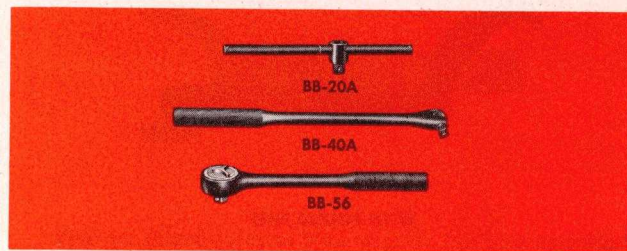
The BS-56C Construction Ratchet has a long, round handle with tapered end, 4 inches long for aligning bolt holes of various diameters.

Sliding Tee, Flex Handle and both Ratchets listed below can be used with Supersockets listed on page 25 or black finish Power Drive Sockets listed on page 78.

No.	Description	Wgt. Ea., Lbs.
BS-20A	Sliding Tee Handle—11" long .....	.96
BS-41A	Flex Handle—17" long, flex head, knurled grip....	1.8
S-41RK	Repair Kit for BS-41A—Tang, Spring and Pin....	.15
BS-56	Reversible Ratchet—10-1/2" long.....	1.4
BS-56C	Reversible Construction Ratchet—13" long.....	1.4
BS-56RK	Repair Kit for BS-56, BS-56C—Rings and Unit...	.28

3/8 Inch SQ. DR. RATCHETS and DRIVERS

INDUSTRIAL BLACK FINISH SELECTED ALLOY STEEL

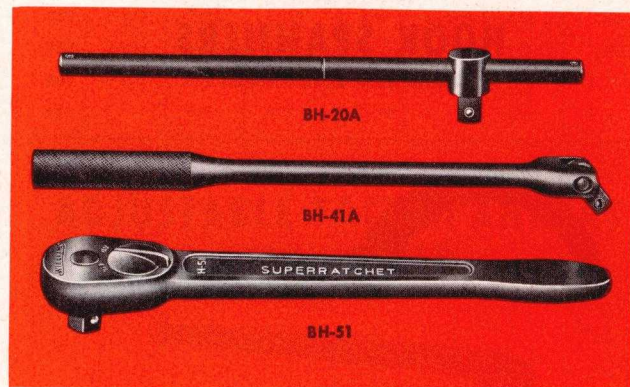


The BB-56 3/8" Square Drive Ratchet has 41 teeth broached in the head. It employs a triple-toothed, double ended oscillating pawl. One of a given set of teeth is in engagement with the gear in a no-load condition with the remaining teeth coming into engagement as the load is progressively increased. This provides an unusually strong ratchet with a handle swing of only 8.8 degrees. The on-axis shifter adds to the ease of operation. Use with hand or power drive sockets listed on pages 21 and 77.

No.	Description	Wgt. Ea., Lbs.
BB-20A	Sliding Tee Handle—6-1/2" long.....	.26
BB-40A	Flex Handle—9-5/8" long, flex head, knurled grip.	.57
B-40RK	Repair Kit for BB-40A—Tang, Spring and Pin...	.06
BB-56	Reversible Ratchet—7-3/8" long, knurled grip....	.66
BB-56RK	Repair Kit for BB-56—Ring, Washer, Ratchet Unit	.16

3/4 Inch SQ. DR. RATCHETS and DRIVERS

INDUSTRIAL BLACK FINISH SELECTED ALLOY STEEL



In Williams BH-51 3/4" Square Drive Ratchet, the 24 tooth action is used because of the brute strength required in such a large size. In this size range, it is rare that the obstruction problems would require a ratchet having less than 15 degree handle swing or working arc. Here strength and stamina override ratchet increment refinements.

Sliding Tee, Flex Handle and Ratchet listed below can be used with Supersockets listed on page 30 or black finish Power Drive Sockets listed on page 80.

No.	Description	Wgt. Ea., Lbs.
BH-20A	Sliding Tee Handle—17-1/2" long.....	2.7
BH-41A	Flex Handle—20" long, flex head, knurled grip....	4.1
H-41RK	Repair Kit for BH-41A—Tang, Spring and Pin...	.39
BH-51	Reversible Ratchet—19" long.....	5.1
H-51-1	Retaining Ring.....	...
H-51-2	Gear and Plug.....	...
H-51-3	Dog (Pawl).....	...
H-51-4	Bearing Pin.....	...
H-51-5	Spring (Plunger).....	...
H-51-6	Shifter Bolt.....	...
H-51-7	Shifter Bolt Pin.....	...
H-51-8	Plunger (Ball).....	...

**FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS**

Ask for Technical Bulletin TB-125
which covers design features and
application of Williams Power Drive
Sockets and Accessories.

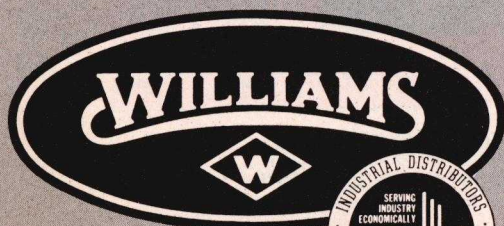


Use caution when adapting down to
a smaller drive socket, to avoid over-
loading the smaller socket. Never
adapt down more than to the next
smallest drive size. Resultant breakage
could cause serious injury.



6 POWER DRIVE SOCKETS

Section 6 POWER DRIVE SOCKETS



**THIS IS
THE TEAM
THAT DELIVERS**



TOOLPOWER

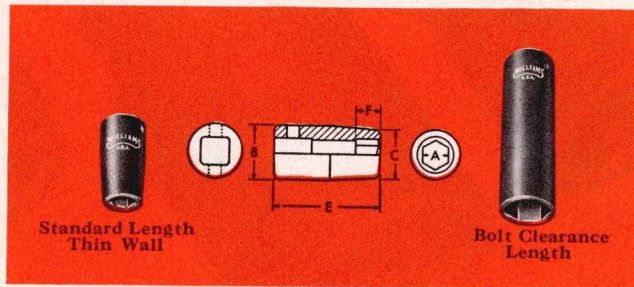
**WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE**





1/4"

"O" SERIES-1/4 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES



Made from extra tough Selected Alloy Steel and specially heat-treated to withstand the constant shock and pounding involved in electric and pneumatic impact nut setting and power nut running.

Example of Order Nomenclature: "30-609 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH — THIN WALL

SINGLE HEXAGON OPENINGS

Industrial Black Finish

3/16	30-606	7/16	19/64	27/32	3/16	.02
7/32	30-607	7/16	21/64	27/32	13/64	.01
1/4	30-608	7/16	23/64	27/32	7/32	.02
9/32	30-609	7/16	13/32	27/32	15/64	.03
5/16	30-610	29/64	29/64	27/32	1/4	.02
11/32	30-611	31/64	31/64	27/32	9/32	.02
3/8	30-612	17/32	17/32	27/32	5/16	.04
7/16	30-614	39/64	39/64	27/32	9/32	.03
1/2	30-616	43/64	43/64	27/32	21/64	.04

BOLT CLEARANCE LENGTH

SINGLE HEXAGON OPENINGS

Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE B

1/4	10-608	7/16	7/16	2	7/32	.05
5/16	10-610	1/2	1/2	2	1/4	.06
3/8	10-612	9/16	9/16	2	5/16	.08
7/16	10-614	5/8	5/8	2	9/32	.09



EXTENSIONS

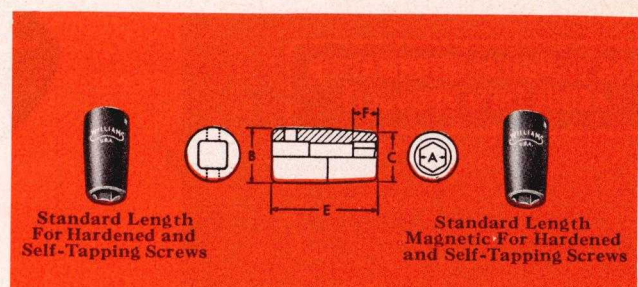
Male squares have spring plunger
For replacement locking device parts see page 84

Example of Order Nomenclature: "O-102A EXTENSION"

MILITARY DESCRIPTION: GGG-W-660-5, TYPE II, EXTENSION

No.	Length	Square Male	Square Female	Wgt. Ea., Lbs.
O-102A	2	1/4	1/4	.06
O-106A	6	1/4	1/4	.09

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



Sockets for use on hardened and self-tapping screws are specially hardened for this type of application. Also available with Alnico magnets. These are excellent high production sockets for appliance, electronic and automotive applications.

Example of Order Nomenclature: "20-608M SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH

SINGLE HEXAGON OPENINGS

FOR HARDENED AND SELF-TAPPING SCREWS

Finish—Copper colored for positive identification

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 5, STYLE A

3/16	20-606	7/16	5/16	7/8	1/16	.02
1/4	20-608	15/32	15/32	7/8	7/64	.02
5/16	20-610	17/32	17/32	7/8	1/8	.03
3/8	20-612	5/8	5/8	7/8	13/64	.03
7/16	20-614	11/16	11/16	15/16	15/64	.05
1/2	20-616	3/4	3/4	15/16	15/64	.06

STANDARD LENGTH

SINGLE HEXAGON OPENINGS-MAGNETIC

FOR HARDENED AND SELF-TAPPING SCREWS

Finish—Copper colored for positive identification

3/16	20-606M	7/16	5/16	7/8	1/16	.02
1/4	20-608M	15/32	15/32	7/8	7/64	.02
1/4	20-608MT	15/32	25/64	7/8	7/64	.02
5/16	20-610M	17/32	17/32	7/8	1/8	.03
5/16	20-610MT	1/2	15/32	7/8	1/8	.03
3/8	20-612M	5/8	5/8	7/8	3/16	.03
7/16	20-614M	11/16	11/16	15/16	15/64	.04



HEXAGON — SQUARE SHANKS

Male squares have spring plunger
For replacement locking device parts see page 84

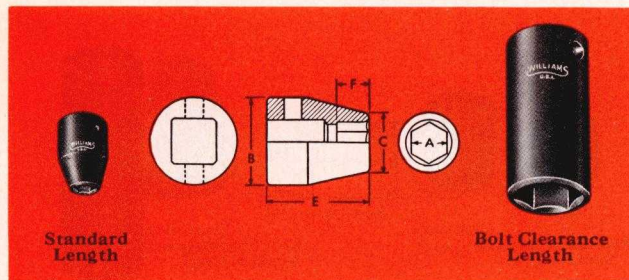
Example of Order Nomenclature: "O-04A HEX-SQ. SHANK"

No.	Length	Square Male	Hex Male	Wgt. Ea., Lbs.
O-02A	2	1/4	1/4	.05
O-04A	4	1/4	1/4	.11



"2" SERIES-3/8 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES

3/8



Made from extra tough Selected Alloy Steel and specially heat-treated to withstand the constant shock and pounding involved in electric and pneumatic impact nut setting and power nut running.

Example of Order Nomenclature: "2-618 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

5/16	2-610	45/64	15/32	1	7/32	.06
11/32	2-611	45/64	33/64	1	1/4	.06
3/8	2-612	45/64	9/16	1	1/4	.06
7/16	2-614	45/64	41/64	1-1/16	9/32	.06
1/2	2-616	3/4	3/4	1-1/8	21/64	.06
9/16	2-618	53/64	53/64	1-3/16	13/32	.10
19/32	2-619	55/64	55/64	1-3/16	13/32	.08
5/8	2-620	59/64	59/64	1-3/16	13/32	.11
11/16	2-622	1- 1/64	1- 1/64	1-3/16	7/16	.14
3/4	2-624	1- 5/64	1- 5/64	1-1/4	9/16	.17

STANDARD LENGTH THIN WALL DOUBLE HEXAGON OPENINGS Industrial Black Finish

1/4	32-1208	43/64	3/8	1-1/8	7/32	.06
5/16	32-1210	43/64	7/16	1-1/8	1/4	.05
3/8	32-1212	43/64	35/64	1-1/8	9/32	.05
7/16	32-1214	43/64	5/8	1-1/8	5/16	.06
1/2	32-1216	45/64	45/64	1-3/16	11/32	.07
9/16	32-1218	25/32	25/32	1-3/16	3/8	.09
5/8	32-1220	55/64	55/64	1-3/16	13/32	.09
11/16	32-1222	15/16	15/16	1-3/16	7/16	.11
3/4	32-1224	1- 1/64	1- 1/64	1-3/16	15/32	.15

STANDARD LENGTH DOUBLE SQUARE (8 PT.) OPENINGS FOR SQUARE NUTS Industrial Black Finish

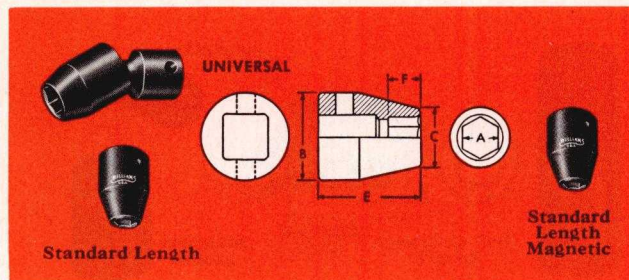
MILITARY DESCRIPTION: GGG-660-5, TYPE I, CLASS 2, STYLE A

5/16	2-810	11/16	9/16	7/8	1/4	.04
3/8	2-812	11/16	41/64	15/16	5/16	.04
7/16	2-814	3/4	3/4	15/16	15/16	.05
1/2	2-816	7/8	7/8	15/16	19/64	.09
9/16	2-818	1	1	1- 1/8	3/8	.14
5/8	2-820	1- 1/8	1- 1/8	1- 1/8	25/64	.21

BOLT CLEARANCE LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE B

5/16	12-610	11/16	15/32	2-1/2	1/4	.09
3/8	12-612	11/16	35/64	2-1/2	5/16	.09
7/16	12-614	11/16	41/64	2-1/2	9/32	.09
1/2	12-616	3/4	3/4	2-1/2	21/64	.09
9/16	12-618	13/16	13/16	2-1/2	13/32	.11
5/8	12-620	15/16	15/16	2-1/2	29/64	.13
11/16	12-622	1	1	2-1/2	29/64	.16
3/4	12-624	1- 1/16	1- 1/16	2-1/2	9/16	.19



Sockets for use on hardened and self-tapping screws are specially hardened for this type of application. Also available with Alnico magnets. These are excellent high production sockets for appliance, electronic and automotive applications.

Example of Order Nomenclature: "2-106A EXTENSION"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH SINGLE HEXAGON OPENINGS FOR HARDENED AND SELF-TAPPING SCREWS Finish—Copper colored for positive identification

5/16	22-610	11/16	1/2	1-1/16	1/8	.06
3/8	22-612	3/4	5/8	1-1/16	3/16	.08
7/16	22-614	3/4	3/4	1-1/16	15/64	.09
1/2	22-616	13/16	13/16	1-1/16	15/64	.10

STANDARD LENGTH SINGLE HEX OPENINGS MAGNETIC FOR HARDENED AND SELF-TAPPING SCREWS Finish—Copper colored for positive identification

5/16	22-610M	11/16	1/2	1-1/16	1/8	.07
3/8	22-612M	3/4	5/8	1-1/16	3/16	.09
7/16	22-614M	3/4	3/4	1-1/16	15/64	.10
1/2	22-616M	13/16	13/16	1-1/16	15/64	.11

UNIVERSAL SINGLE HEXAGON OPENINGS Industrial Black Finish

3/8	42-612	3/4	9/16	2-1/32	5/16	.19
7/16	42-614	3/4	5/8	2-1/32	5/16	.19
1/2	42-616	3/4	23/32	2-1/32	5/16	.19
9/16	42-618	3/4	13/16	2-1/8	13/32	.19
5/8	42-620	3/4	7/8	2-3/16	29/64	.19



MILITARY DESCRIPTION: GGG-W-660-5, TYPE III, ADAPTER, GGG-W-660-5, TYPE II, EXTENSION, GGG-W-660-5, TYPE IV, UNIV. JOINT

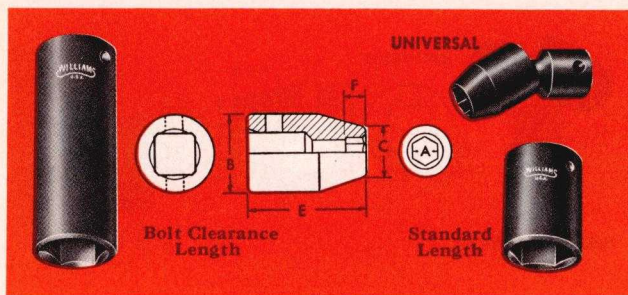
No.	Description	Square Female	Male	Length	Wgt. Ea. Lbs.
2-02A	Hexagon—Square Shank	...	3/8Sqx1/4 Hex	2	.06
2-33A	Hexagon—Square Shank	...	3/8Sqx7/16Hex	2-3/4	.15
2-35A	Hexagon—Square Shank	...	3/8Sqx7/16Hex	5	.28
2-38A	Hexagon—Square Shank	...	3/8Sqx7/16Hex	8	.53
2-4A	Adapter	3/8	1/2 Square	1-3/8	.14
2-103A	Extension	3/8	3/8 Square	3	.09
2-106A	Extension	3/8	3/8 Square	6	.35
2-140A	Universal Joint, O.D. 7/8", range 55°...	3/8	3/8 Square	2-5/16	.16

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



1/2"

"4" SERIES-1/2 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES



Example of Order Nomenclature: "44-616 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH—SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

3/8	4-612	57/64	39/64	1-1/2	5/16	.15
7/16	4-614	57/64	11/16	1-1/2	25/64	.15
1/2	4-616	61/64	25/32	1-1/2	21/64	.19
9/16	4-618	61/64	7/8	1-1/2	13/32	.19
19/32	4-619	57/64	57/64	1-1/2	5/16	.16
5/8	4-620	61/64	61/64	1-1/2	29/64	.18
11/16	4-622	1- 1/16	1- 1/16	1-1/2	29/64	.22
3/4	4-624	1- 9/64	1- 9/64	1-5/8	9/16	.27
25/32	4-625	1- 1/8	1- 1/8	1-1/2	7/16	.26
13/16	4-626	1-15/64	1-15/64	1-5/8	39/64	.34
7/8	4-628	1-21/64	1-21/64	1-5/8	39/64	.35
15/16	4-630	1-23/64	1-23/64	1-3/4	23/32	.43
1	4-632	1-29/64	1-29/64	1-3/4	35/64	.50
1-1/16	4-634	1-33/64	1-33/64	2	13/16	.63
1-1/8	4-636	1-19/32	1-19/32	2	13/16	.70
1-3/16	4-638	1- 5/8	1- 5/8	2	7/8	.74
1-1/4	4-640	1-11/16	1-11/16	2	29/32	.72

STD. LENGTH—THIN WALL—DOUBLE HEXAGON OPENINGS Industrial Black Finish

7/16	34-1214	57/64	41/64	1- 1/2	25/64	.11
1/2	34-1216	57/64	23/32	1- 1/2	25/64	.11
9/16	34-1218	57/64	51/64	1- 1/2	1/2	.13
5/8	34-1220	57/64	57/64	1-17/32	1/2	.14
11/16	34-1222	61/64	61/64	1-17/32	17/32	.17
3/4	34-1224	1- 1/32	1- 1/32	1- 9/16	9/16	.19
13/16	34-1226	1- 7/64	1- 7/64	1-19/32	5/8	.23
7/8	34-1228	1- 3/16	1- 3/16	1-41/64	5/8	.27
15/16	34-1230	1-19/64	1-19/64	1-41/64	21/32	.29

STANDARD LENGTH—DOUBLE SQUARE (8 PT.) OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 2, STYLE A

3/8	4-812	7/8	23/32	1-1/2	5/16	.14
7/16	4-814	15/16	13/16	1-1/2	15/64	.17
1/2	4-816	1	59/64	1-1/2	19/64	.20
9/16	4-818	1- 1/8	1- 1/64	1-1/2	3/8	.25
5/8	4-820	1- 1/8	1- 7/64	1-1/2	25/64	.20
11/16	4-822	1- 1/4	1-13/64	1-1/2	29/64	.31
3/4	4-824	1- 5/16	1- 5/16	1-1/2	17/32	.36
13/16	4-826	1-13/32	1-13/32	1-1/2	17/32	.42
7/8	4-828	1-33/64	1-33/64	1-1/2	39/64	.50
15/16	4-830	1-39/64	1-39/64	1-3/4	5/8	.68
1	4-832	1-23/32	1-23/32	1-3/4	21/32	.75

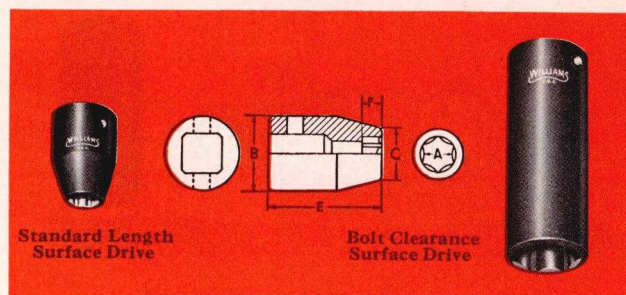
BOLT CLEARANCE LENGTH—SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE B

3/8	14-612	7/8	39/64	3-1/4	5/16	.37
7/16	14-614	7/8	11/16	3-1/4	9/32	.37
1/2	14-616	15/16	25/32	3-1/4	21/64	.33
9/16	14-618	15/16	7/8	3-1/4	13/32	.30
5/8	14-620	1-	1-	3-1/4	29/64	.35
11/16	14-622	1- 1/16	1- 1/16	3-1/4	29/64	.44
3/4	14-624	1- 1/8	1- 1/8	3-1/4	9/16	.47
13/16	14-626	1- 1/4	1- 1/4	3-1/4	39/64	.57
7/8	14-628	1- 5/16	1- 5/16	3-1/2	39/64	.71
15/16	14-630	1- 3/8	1- 3/8	3-1/2	23/32	.81
1	14-632	1- 7/16	1- 7/16	3-1/2	35/64	.89

UNIVERSAL—SINGLE HEXAGON OPENINGS Industrial Black Finish

1/2	44-616	1	25/32	2- 3/8	5/16	.37
9/16	44-618	1	55/64	2- 7/16	3/8	.38
5/8	44-620	1	15/16	2- 7/16	5/16	.40
11/16	44-622	1	1- 1/32	2- 5/8	29/64	.41
3/4	44-624	1	1- 1/8	2-23/32	9/16	.41
13/16	44-626	1	1- 3/16	2-27/32	39/64	.45
7/8	44-628	1	1-17/64	2-27/32	39/64	.46
15/16	44-630	1	1- 3/8	2-15/16	23/32	.52
1	44-632	1	1- 7/16	2-15/16	33/64	.53



Example of Order Nomenclature: "14-626A SOCKET"

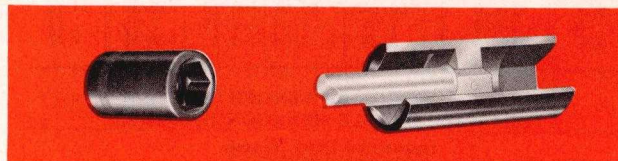
Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STD. LENGTH—SURFACE DRIVE—SINGLE HEX OPENINGS Industrial Black Finish

7/16	4-614A	7/8	11/16	1-1/2	9/32	.13
1/2	4-616A	15/16	25/32	1-1/2	21/64	.16
9/16	4-618A	15/16	55/64	1-1/2	13/32	.16
5/8	4-620A	15/16	15/16	1-1/2	29/64	.16
11/16	4-622A	1- 1/32	1- 1/32	1-1/2	29/64	.19
3/4	4-624A	1- 7/64	1- 7/64	1-1/2	9/16	.23
13/16	4-626A	1- 3/16	1- 3/16	1-1/2	39/64	.28
7/8	4-628A	1-17/64	1-17/64	1-5/8	39/64	.31

BOLT CLEAR. LGTH—SURFACE DRIVE—SINGLE HEX OPNGS. Industrial Black Finish

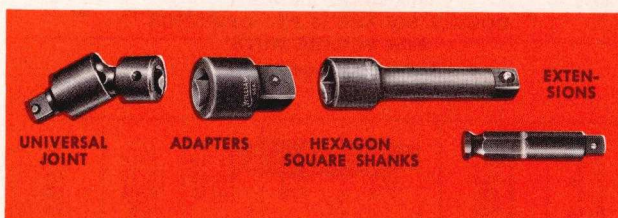
7/16	14-614A	7/8	11/16	3-1/4	9/32	.34
1/2	14-616A	15/16	25/32	3-1/4	21/64	.40
9/16	14-618A	15/16	7/8	3-1/4	13/32	.36
5/8	14-620A	1-	1-	3-1/4	29/64	.33
3/4	14-624A	1- 1/8	1- 1/8	3-1/4	9/16	.50
13/16	14-626A	1- 1/4	1- 1/4	3-1/4	39/64	.56



FLIP SOCKET FOR WHEEL LUG NUTS AND BOLTS

A time-saving double-ended hex socket for use with 1/2" square drive impact wrenches. Black Finish.

Nominal Openings	No.	Nominal Dimensions		Wgt. Ea. Lbs.
		Length	Diameter	
3/4 & 13/16	4-2426	2-3/16	1-1/4	.48



MILITARY DESCRIPTION: GGG-W-660-5, TYPE III, ADAPTER, GGG-W-660-5, TYPE II, EXTENSION, GGG-W-660-5, TYPE IV, UNIV. JOINT

No.	Description	Sq. F	Male	Length	Wgt.
4-2A	Adapter.....	1/2	3/8 Square	1- 1/2	.13
4-5A	Adapter.....	1/2	5/8 Square	1-11/16	.23
4-6	Adapter.....	1/2	3/4 Square	1-13/16	.35
4-33A	Hexagon—Square Shank.....	1/2	1/2Sqx7/16 Hex	2- 3/4	.18
4-35A	Hexagon—Square Shank.....	1/2	1/2Sqx7/16 Hex	5	.40
4-53A	Hexagon—Square Shank.....	1/2	1/2Sqx5/8 Hex	3	.28
4-55A	Hexagon—Square Shank.....	1/2	1/2Sqx5/8 Hex	5	.53
4-105A	Extension.....	1/2	1/2 Square	5- 1/2	.54
4-110A	Extension.....	1/2	1/2 Square	10	1.
4-140A	Universal Joint, O.D. 1-1/8", range 55°.	1/2	1/2 Square	2-15/16	.36

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.



"5" SERIES-5/8 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES

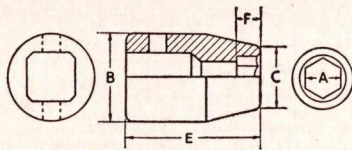
5/8"



Standard Length



Standard Length



Made from extra tough Selected Alloy Steel and specially heat-treated to withstand the constant shock and pounding involved in electric and pneumatic impact nut setting and power nut running.

Example of Order Nomenclature: "5-628 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

1/2	5-616	1- 1/8	13/16	1-1/2	21/64	.31
9/16	5-618	1- 3/16	27/32	1-1/2	13/32	.26
5/8	5-620	1- 3/16	15/16	1-1/2	29/64	.26
11/16	5-622	1- 3/16	1- 1/64	1-1/2	29/64	.26
3/4	5-624	1- 3/16	1- 7/64	1-1/2	9/16	.25
13/16	5-626	1- 3/16	1- 3/16	1-5/8	39/64	.25
7/8	5-628	1-17/64	1-17/64	1-5/8	39/64	.32
15/16	5-630	1-23/64	1-23/64	2	23/32	.44
1	5-632	1- 7/16	1- 7/16	2	35/64	.51
1-1/16	5-634	1-33/64	1-33/64	2	13/16	.58
1-1/8	5-636	1-39/64	1-39/64	2	13/16	.65
1-1/4	5-640	1-25/32	1-25/32	2	29/32	.85
1-5/16	5-642	1-27/32	1-27/32	2	49/64	.86
1-3/8	5-644	1-15/16	1-15/16	2-1/8	49/64	.91
1-7/16	5-646	2	2	2-1/4	49/64	1.
1-1/2	5-648	2- 3/32	2- 3/32	2-3/8	7/8	1.2



UNIVERSAL JOINT

Maximum operating range, 55° included angle. Has ball type connector with cross holes on both sides of female end.

Example of Order Nomenclature: "5-140 UNIVERSAL"

MILITARY DESCRIPTION: GGG-W-660-5, TYPE IV, UNIV. JOINT

No.	Description	Square Female	Male	Length	Wgt. Ea., Lbs.
5-140	Universal Joint O.D. 1-1/2".....	5/8	5/8 Square	2-5/8	.75



ADAPTERS

MILITARY DESCRIPTION: GGG-W-660-5, TYPE III, ADAPTER

No.	Length	Square Female	Square Male	Wgt. Ea., Lbs.
5-4A	1-7/8	5/8	*1/2	.35
5-6	2	5/8	13/4	.43

*Male square has spring plunger

†Male square has thru pin hole



EXTENSIONS

MILITARY DESCRIPTION: GGG-W-660-5, TYPE II, EXTENSION

No.	Length	Square Female	Square Male	Wgt. Ea., Lbs.
5-106A	6	5/8	*5/8	.98
5-110A	10	5/8	*5/8	1.5

*Male square has spring plunger



HEXAGON SQUARE SHANKS

No.	Length	Square Male	Hex Male	Wgt. Ea., Lbs.
5-53A	3	*5/8	5/8	.33
5-55A	5	*5/8	5/8	.63
5-63A	3	*5/8	3/4	.40

*Male square has spring plunger

See Page 121 for American Standard Square and Hexagon Bolts and Nuts, as related to nominal wrench openings.

3/4"

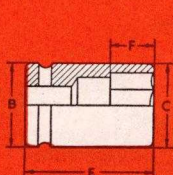
"6" SERIES-3/4 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES



Standard Length



* Can be used for servicing
Standard Budd Wheels.



Bolt Clearance Length

Example of Order Nomenclature: "16-640 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

5/8	6-620	1-5/8	1-3/32	1-3/4	29/64	.62
11/16	6-622	1-5/8	1-5/32	1-3/4	29/64	.61
3/4	6-624	1-5/8	1-1/4	1-3/4	9/16	.62
25/32	6-625	1-5/8	1-9/32	1-3/4	7/16	.46
13/16	6-626	1-5/8	1-3/8	1-7/8	39/64	.69
7/8	6-628	1-5/8	1-1/2	1-7/8	39/64	.70
15/16	6-630	1-5/8	1-9/16	2	23/32	.75
1	6-632	1-5/8	1-5/8	2	35/64	.78
1-1/16	6-634	1-5/8	1-11/16	2	13/16	.78
1-1/8	6-636	1-5/8	1-3/4	2-1/8	13/16	.80
1-3/16	6-638	1-5/8	1-7/8	2-1/4	7/8	.95
1-1/4	6-640	1-3/4	2	2-1/4	29/32	1.1
1-5/16	6-642	1-3/4	2-1/16	2-1/4	49/64	1.2
1-3/8	6-644	1-3/4	2-1/8	2-1/4	49/64	1.3
1-7/16	6-646	1-3/4	2-1/4	2-1/4	49/64	1.4
*1-1/2	6-648	1-3/4	2-5/16	2-3/8	7/8	1.5
1-5/8	6-652	1-7/8	2-7/16	2-3/8	7/8	1.7
1-11/16	6-654	1-7/8	2-1/2	2-3/8	1	1.7

BOLT CLEARANCE LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE B

5/8	16-620	1-5/8	1-3/32	3-1/4	29/64	1.1
11/16	16-622	1-5/8	1-5/32	3-1/4	29/64	1.3
3/4	16-624	1-5/8	1-1/4	3-1/4	9/16	1.3
13/16	16-626	1-5/8	1-3/8	3-1/4	39/64	1.3
7/8	16-628	1-5/8	1-1/2	3-1/2	39/64	1.4
15/16	16-630	1-5/8	1-9/16	3-1/2	23/32	1.4
1	16-632	1-5/8	1-5/8	3-1/2	35/64	1.3
1-1/16	16-634	1-5/8	1-11/16	3-1/2	13/16	1.3
1-1/8	16-636	1-5/8	1-3/4	3-1/2	13/16	1.4
1-3/16	16-638	1-5/8	1-7/8	3-1/2	7/8	1.5
1-1/4	16-640	1-3/4	2	3-1/2	29/32	1.9
1-5/16	16-642	1-3/4	2-1/16	3-1/2	49/64	1.9
1-3/8	16-644	1-3/4	2-1/8	3-1/2	49/64	2.1
*1-7/16	16-646	1-3/4	2-1/4	3-1/2	49/64	2.3
1-1/2	16-648	1-3/4	2-5/16	3-1/2	7/8	2.3
1-5/8	16-652	1-3/4	2-7/16	3-1/2	7/8	2.5

FOR SERVICING BUDD WHEELS



6-7BW



6-4BW

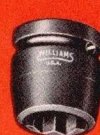
16-426BW

Sockets 6-4BW and 6-7BW each have two openings (13/16" sq. and 1-1/2" hex) in the same socket. They are designed for quick application and removal of all "on-the-road" Budd type wheels. Their use eliminates the need of two separate sockets.

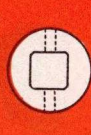
For checking the tightness of installed wheels, the 1-1/2" hex opening of either 6-4BW or 6-7BW may be used with 16-426BW to tighten the square-ended Budd stud separately. For 1" square drive series see page 82.

No.	Length	"O" Ring No.	RETAINER PINS		Weight Each
			No.	Length	
6-4BW	4	7-1B	7-2D	1-7/8	3.4
6-7BW	7-1/2	6-1A	6-2C	1-1/2	5.7
16-426BW	4	6-1A	6-2B	1-1/8	1.7

For Retainer Pins and "O" Rings to fit above Sockets, Adapters and Extensions, see page 84.



Standard Length



*Can be used for servicing
Standard Budd Wheels.



Standard Length

Example of Order Nomenclature: "6-4A ADAPTER"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH DOUBLE SQUARE (8 PT.) OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 3, STYLE A (6-420 thru 6-426)
GGG-W-660-5, TYPE I, CLASS 2, STYLE A (6-826 thru 6-846)

5/8	6-420	1-5/8	1-1/4	1-5/8	25/64	.45
3/4	6-424	1-5/8	1-1/2	1-3/4	17/32	.56
*13/16	6-426	1-5/8	1-5/8	1-7/8	5/8	.65
13/16	6-826	1-5/8	1-5/8	1-7/8	17/32	.74
7/8	6-828	1-5/8	1-3/4	1-7/8	39/64	.83
15/16	6-830	1-5/8	1-13/16	1-7/8	5/8	.84
1	6-832	1-5/8	1-15/16	2	21/32	.88
1-1/16	6-834	1-3/4	2	2	3/4	1.1
1-1/8	6-836	1-3/4	2-1/8	2-1/8	25/32	1.3
1-3/16	6-838	1-3/4	2-1/4	2-1/8	13/16	1.4
1-1/4	6-840	1-3/4	2-3/8	2-1/8	29/32	1.6
1-5/16	6-842	1-3/4	2-1/2	2-1/4	49/64	1.8
1-7/16	6-846	1-3/4	2-5/8	2-1/4	49/64	1.9



UNIVERSAL JOINT



ADAPTERS



EXTENSIONS

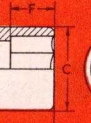
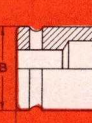
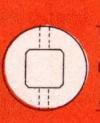
Male squares have thru Pin Holes

MILITARY DESCRIPTION: GGG-W-660-5, TYPE III, ADAPTER,
GGG-W-660-5, TYPE II, EXTENSION, GGG-W-660-5, TYPE IV, UNIV. JOINT

No.	Description	Square		Length	Wgt. Ea., Lbs.
		Female	Male		
6-4A	Adapter	3/4	1/2	2-1/16	.70
6-7	Adapter	3/4	1	2-1/2	.88
6-107	Extension	3/4	3/4	7	1.8
6-110	Extension	3/4	3-4	10	2.6
6-113	Extension	3/4	3/4	13	3.3
6-140	Universal O.D. 1-3/4" range 55°	3/4	3/4	3-5/16	1.3



Standard Length



Critical wear surfaces are specially heat-treated and hardened to service high-strength bolts used to fasten track plates on all types of crawler equipment.

Nominal Opening A	No.	Nominal Dimensions				Weight Each Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall D	Depth Opening F	

STANDARD LENGTH TRACK BOLT SOCKETS SINGLE HEXAGON OPENINGS Copper Colored Finish

3/4	6-624TB	1-5/8	1-1/4	1-3/4	9/16	.62
13/16	6-626TB	1-5/8	1-3/8	1-7/8	39/64	.69
7/8	6-628TB	1-5/8	1-1/2	1-7/8	39/64	.70
15/16	6-630TB	1-5/8	1-9/16	2	23/32	.75
1	6-632TB	1-5/8	1-5/8	2	35/64	.78
1-1/8	6-636TB	1-5/8	1-3/4	2-1/8	13/16	.80



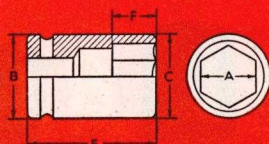
"7" SERIES - 1 Inch SQUARE DRIVE - POWER DRIVE SOCKETS

FOR ALL TYPES OF POWER WRENCHES

1"

Nos. 7-624
to 7-644

No. 7-646

Nos. 7-648
to 7-6184* Can be used for servicing
Standard Budd Wheels.Nos. 17-628
to 17-644

No. 17-646

Nos. 17-648
to 17-6184

Example of Order Nomenclature: "7-6100 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH
SINGLE HEXAGON OPENINGS
Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

3/4	7-624	2	1- 7/16	2- 1/16	1/2	1.1
13/16	7-626	2	1- 1/2	2- 3/16	17/32	1.1
7/8	7-628	2	1-17/32	2- 3/16	17/32	1.2
15/16	7-630	2	1-19/32	2- 3/16	5/8	1.2
1	7-632	2	1- 3/4	2- 1/4	35/64	1.3
1- 1/16	7-634	2	1- 3/4	2- 1/4	21/32	1.2
1- 1/8	7-636	2-1/8	1-13/16	2- 3/8	11/16	1.5
1- 3/8	7-638	2-1/8	1- 7/8	2- 7/16	3/4	1.5
1- 1/2	7-640	2	2- 1/8	2- 7/16	13/16	1.5
1- 5/16	7-642	2-1/8	2- 1/16	2- 9/16	49/64	1.6
1- 3/4	7-644	2-1/4	2- 1/8	2- 9/16	49/64	1.3
1- 7/16	7-646	2-1/4	2- 1/4	2- 9/16	49/64	1.8
1- 1/2	7-648	2-1/4	2-5/16	2- 5/8	7/8	1.9
1- 9/16	7-650	2-1/4	2- 3/8	2- 5/8	7/8	2.
1- 5/8	7-652	2-1/4	2- 7/16	2- 5/8	7/8	2.
1-11/16	7-654	2-1/4	2- 9/16	2-11/16	1	1.8
1- 3/4	7-656	2-1/4	2- 5/8	2-11/16	1	2.3
1-13/16	7-658	2-1/4	2- 3/4	2- 3/4	1	2.4
1- 7/8	7-660	2-1/4	2- 3/4	2- 7/8	1- 3/32	2.
1-15/16	7-662	2-1/4	2- 7/8	2- 7/8	1- 3/32	2.8
2	7-664	2-1/4	3	2-15/16	1- 3/32	2.4
2- 1/16	7-666	2-1/4	3	3- 1/16	1-13/64	2.3
2- 1/8	7-668	2-3/8	3- 1/8	3- 1/8	1-13/64	3.6
2- 3/16	7-670	2-3/8	3- 1/4	3- 1/8	1-13/64	3.8
2- 1/4	7-672	2-3/8	3- 1/4	3- 1/4	1- 5/16	3.8
2- 5/16	7-674	2-3/8	3- 3/8	3- 5/16	1- 5/16	4.3
2- 3/8	7-676	2-3/8	3- 1/2	3- 5/16	1- 5/16	4.5
2- 7/16	7-678	2-3/8	3- 1/2	3- 1/2	1-25/64	4.5
2- 1/2	7-680	2-3/8	3- 5/8	3- 1/2	1-25/64	5.
2- 9/16	7-682	2-3/8	3- 3/4	3- 1/2	1-25/64	5.4
2- 5/8	7-684	2-3/8	3- 3/4	3-11/16	1- 1/2	5.4
2-11/16	7-686	2-3/8	3- 7/8	3-11/16	1- 1/2	5.8
2- 3/4	7-688	2-3/8	3- 7/8	3-11/16	1- 1/2	5.4
2-13/16	7-690	2-3/8	4	3- 7/8	1-39/64	6.4
2- 7/8	7-692	2-3/8	4	3-15/16	1-39/64	6.5
2-15/16	7-694	2-3/8	4- 1/8	3-15/16	1-39/64	5.9
3	7-696	2-3/8	4- 1/4	4- 1/16	1-23/32	7.1
3- 1/8	7-6100	2-3/8	4- 3/8	4- 1/8	1-23/32	7.5
3- 1/4	7-6104	2-3/8	4- 1/2	4- 1/8	1-23/32	7.5
3- 3/8	7-6108	2-3/8	4- 5/8	4- 1/2	1-59/64	8.6
3- 1/2	7-6112	2-3/8	4- 3/4	4- 1/2	1-59/64	8.9
3- 5/8	7-6116	2-3/8	5	4- 1/2	1-59/64	9.9

Sockets marked * are Non-Stock, available on special order only.

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

*3-13/16	7-6118	3-1/4	5- 1/4	4- 9/16	2- 3/16	12.9
3- 3/4	7-6120	3-1/4	5- 1/4	4- 9/16	2-15/64	12.6
*3-13/16	7-6122	3-1/4	5- 1/4	4- 9/16	2-17/64	12.2
3- 7/8	7-6124	3-1/4	5- 1/4	4- 9/16	2- 5/16	11.8
*3-15/16	7-6126	3-1/4	5- 1/2	4- 7/8	2-23/64	14.6
4	7-6128	3-1/4	5- 1/2	4- 7/8	2-25/64	14.1
*4- 1/16	7-6130	3-1/4	5- 3/4	4- 7/8	2- 7/16	16.1
4- 1/8	7-6132	3-1/4	5- 3/4	4- 7/8	2-31/64	15.7
*4- 3/16	7-6134	3-1/4	6	5- 3/8	2-33/64	19.7
4- 1/4	7-6136	3-1/4	6	5- 3/8	2- 9/16	19.2
*4- 5/16	7-6138	3-1/4	6	5- 3/8	2-39/64	18.7
4- 3/8	7-6140	3-1/4	6	5- 3/8	2-41/64	18.2
*4- 7/16	7-6142	3-1/4	6	5- 3/8	2-11/16	17.7
4- 1/2	7-6144	3-1/4	6- 1/4	5- 3/4	2-47/64	21.7
*4- 9/16	7-6146	3-1/4	6- 1/2	5- 3/4	2-49/64	24.4
4- 5/8	7-6148	3-1/4	6- 1/2	5- 3/4	2-13/16	23.8
*4- 3/4	7-6152	3-1/4	6- 3/4	5- 3/4	2-57/64	26.0
4- 7/8	7-6156	3-1/4	7	6- 1/4	2-63/64	31.1
*5	7-6160	3-1/4	7- 1/4	6- 1/4	3- 1/16	33.7
*5- 3/8	7-6172	3-1/4	7- 3/4	6- 1/2	3- 5/16	39.5
*5- 3/4	7-6184	3-1/4	8- 1/4	6- 1/2	3- 9/16	44.2

For Retainer Pins and "O" Rings to fit above Sockets, Adapters and Extensions, see page 84.

Example of Order Nomenclature: "17-654 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

BOLT CLEARANCE LENGTH
SINGLE HEXAGON OPENINGS
Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE B

7/8	17-628	2	1- 7/16	3	39/64	1.8
15/16	17-630	2	1-19/32	3	23/32	1.8
1	17-632	2	1- 3/4	3	35/64	1.8
1- 1/16	17-634	2	1- 3/4	3	13/16	1.8
1- 1/8	17-636	2-1/8	1-13/16	3	13/16	2.
1- 3/8	17-638	2-1/8	1- 7/8	3	7/8	2.3
1- 1/4	17-640	2-1/8	2- 1/8	3	29/32	1.9
1- 5/16	17-642	2-1/8	2- 1/16	3-1/2	49/64	2.1
1- 3/8	17-644	2-1/4	2- 1/8	3-1/2	49/64	2.5
1- 7/16	17-646	2-1/4	2- 1/4	3-1/2	49/64	2.5
*1- 1/2	17-648	2-1/4	2-5/16	3-1/2	7/8	2.5
1- 9/16	17-650	2-1/4	2- 3/8	3-1/2	7/8	2.6
1- 5/8	17-652	2-1/4	2- 7/16	3-1/2	7/8	2.8
1-11/16	17-654	2-1/4	2- 9/16	3-5/8	1	3.
1- 3/4	17-656	2-1/4	2- 5/8	3-5/8	1	3.
1-13/16	17-658	2-1/4	2- 3/4	3-5/8	1	3.4
1- 7/8	17-660	2-1/4	2- 3/4	3-7/8	1- 3/32	3.5
1-15/16	17-662	2-1/4	2- 7/8	3-7/8	1- 3/32	3.9
2	17-664	2-1/4	3	3-7/8	1- 3/32	4.1
2- 1/16	17-666	2-1/4	3	4-1/8	1-13/64	4.
2- 1/8	17-668	2-3/8	3- 1/8	4-1/8	1-13/64	4.8
2- 3/16	17-670	2-3/8	3- 1/4	4-1/8	1-13/64	5.
2- 1/4	17-672	2-3/8	3- 1/4	4-3/8	1- 5/16	5.4
2- 5/16	17-674	2-3/8	3- 3/8	4-3/8	1- 5/16	5.8
2- 3/8	17-676	2-3/8	3- 1/2	4-3/8	1- 5/16	6.1
2- 7/16	17-678	3-1/4	3- 5/8	4- 1/2	1-25/64	7.7
2- 1/2	17-680	3-1/4	3- 5/8	4- 1/2	1-25/64	7.5

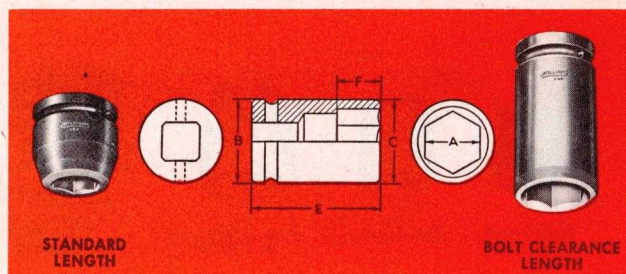
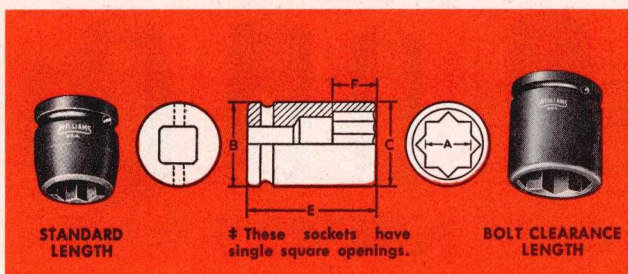
Sockets marked * are Non-Stock, available on special order only.

2- 9/16	17-682	3-1/4	3- 3/4	4- 1/2	1-25/64	8.0
2- 5/8	17-684	3-1/4	3- 3/4	4-11/16	1- 1/2	8.0
*2-11/16	17-686	3-1/4	3- 7/8	4-11/16	1- 1/2	8.5
2- 3/4	17-688	3-1/4	3- 7/8	4-11/16	1- 1/2	8.2
*2-13/16	17-690	3-1/4	4	4- 7/8	1-39/64	7.7
2- 7/8	17-692	3-1/4	4	4- 7/8	1-39/64	7.4
2-15/16	17-694	3-1/4	4- 1/4	4- 7/8	1-39/64	10.2
3	17-696	3-1/4	4- 1/4	5- 1/8	1-23/32	10.4
3- 1/8	17-6100	3-1/4	4- 1/2	5- 1/8	1-23/32	11.7
3- 1/4	17-6104	3-1/4	4- 1/2	5- 1/8	1-23/32	11.0
3- 3/8	17-6108	3-1/4	4- 3/4	5- 1/2	1-59/64	13.2
3- 1/2	17-6112	3-1/4	4- 3/4	5- 1/2	1-59/64	12.4
*3- 5/8	17-6116	3-1/4	5	5- 1/2	2- 9/64	13.9
*3-11/16	17-6118	3-1/4	5- 1/4	5- 9/16	2- 3/16	15.7
3- 3/4	17-6120	3-1/4	5- 1/4	5- 9/16	2-15/64	15.2
*3-13/16	17-6122	3-1/4	5- 1/4	5- 9/16	2-17/64	14.8
3- 7/8	17-6124	3-1/4	5- 1/4	5- 9/16	2- 5/16	15.6
*3-15/16	17-6126	3-1/4	5- 1/2	5- 7/8	2-23/64	17.9
4	17-6128	3-1/4	5- 1/2	5- 7/8	2-25/64	17.3
*4- 1/16	17-6130	3-1/4	5- 3/4	5- 7/8	2- 7/16	19.9
4- 1/8	17-6132	3-1/4	5- 3/4	5- 7/8	2-31/64	21.5
*4- 3/16	17-6134	3-1/4	6	6- 1/2	2-33/64	24.3
4- 1/4	17-6136	3-1/4	6	6- 1/2	2- 9/16	23.7
*4- 5/16	17-6138	3-1/4	6	6- 1/2	2-39/64	23.1
4- 3/8	17-6140	3-1/4	6	6- 1/2	2-41/64	22.4
*4- 7/16	17-6142	3-1/4	6	6- 1/2	2-11/16	21.8
4- 1/2	17-6144	3-1/4	6- 1/4	7	2-47/64	26.8
*4- 9/16	17-6146	3-1/4	6- 1/2	7- 1/8	2-49/64	30.9
4- 5/8	17-6148	3-1/4	6- 1/2	7- 1/8	2-13/16	30.1
*4- 3/4	17-6152	3-1/4	6- 3/4	7- 1/8	2-57/64	33.0
4- 7/8	17-6156	3-1/4	7	7- 5/8	2-63/64	38.7
*5	17-6160	3-1/4	7- 1/4	7- 3/4	3- 1/16	42.9
*5- 3/8	17-6172	3-1/4	7- 3/4	8	3- 5/16	50.0
*5- 3/4	17-6184	3-1/4	8- 1/4	8	3- 9/16	55.8

6
POWER
DRIVE
SOCKETS

1"

"7" SERIES-1 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES



Example of Order Nomenclature: "7-852 SOCKET"

Nominal Opening A	No.	Maximum Dimensions				Weight Each, Lbs.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

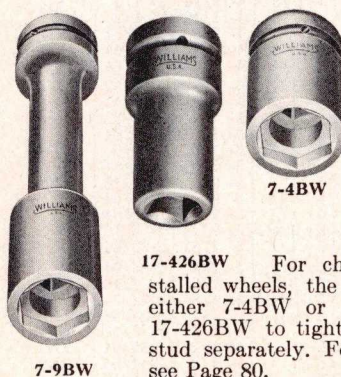
STANDARD LENGTH
SQUARE (4 PT.) AND DOUBLE SQUARE (8 PT.) OPENINGS
Industrial Black Finish

MILITARY DESCRIPTION:

GGG-W-660-5, TYPE I, CLASS 3, STYLE A (7-426 thru 7-436)
GGG-W-660-5, TYPE I, CLASS 2, STYLE A (7-838 thru 7-888)

13/16	7-426	2	1-15/16	2-1/4	1/2	1.3
7/8	7-428	2	2	2-1/4	17/32	1.4
15/16	7-430	2-1/8	2-1/16	2-1/4	1/2	1.6
1	7-432	2-1/8	2-1/8	2-5/16	37/64	1.6
1-1/16	7-434	2-1/8	2-1/8	2-5/16	5/8	1.6
1-1/8	7-436	2-1/4	2-1/4	2-1/2	11/16	2.
1-3/16	7-838	2-1/4	2-5/16	2-1/2	13/16	2.
1-1/4	7-840	2-1/4	2-3/8	2-1/2	29/32	2.
1-5/16	7-842	2-1/4	2-9/16	2-1/2	49/64	2.3
1-3/8	7-844	2-1/4	2-5/8	2-1/2	49/64	2.4
1-7/16	7-846	2-1/4	2-5/8	2-1/2	49/64	2.6
1-1/2	7-848	2-1/4	2-3/4	2-5/8	7/8	2.5
1-9/16	7-850	2-1/4	2-7/8	2-5/8	7/8	2.7
1-5/8	7-852	2-1/4	3	2-5/8	7/8	2.9
1-11/16	7-854	2-1/4	3-1/8	2-13/16	1	3.4
1-3/4	7-856	2-1/4	3-1/4	2-13/16	1	3.6
1-13/16	7-858	2-1/4	3-1/4	2-13/16	1	3.6
1-7/8	7-860	2-1/4	3-3/8	3	1-3/32	3.9
1-15/16	7-862	2-1/4	3-1/2	3-1/16	1-3/32	4.4
2	7-864	2-1/4	3-5/8	3-1/16	1-3/32	4.6
2-1/16	7-866	2-1/4	3-5/8	3-1/4	1-13/64	4.9
2-1/8	7-868	2-1/4	3-3/4	3-1/4	1-13/64	5.1
2-3/16	7-870	2-1/4	3-7/8	3-1/4	1-13/64	5.4
2-1/4	7-872	2-1/4	3-7/8	3-7/16	1-5/16	5.6
2-5/16	7-874	2-3/8	4	3-7/16	1-5/16	5.9
2-3/8	7-876	2-3/8	4-1/8	3-1/2	1-5/16	6.5
2-3/4	7-888	2-3/8	4-1/2	3-7/8	1-1/2	7.6

FOR SERVICING BUDD WHEELS



Sockets 7-4BW and 7-9BW each have two openings (13/16" sq. and 1-1/2" hex) in the same socket. They are designed for quick application and removal of all "on-the-road" Budd type wheels. Their use eliminates the need of two separate sockets.

17-426BW For checking the tightness of installed wheels, the 1-1/2" hexagon opening of either 7-4BW or 7-9BW may be used with 17-426BW to tighten the square-ended Budd stud separately. For 3/4" square drive series see Page 80.

No.	Length	"O" Ring No.	RETAINER PINS		Weight Each
			No.	Length	
7-4BW	4	7-1B	7-2D	1-7/8	3.2
7-9BW	9	7-1B	7-2D	1-7/8	6.7
17-426BW	4	7-1B	7-2D	1-7/8	1.8

For Retainer Pins and "O" Rings to fit above Sockets, Adapters and Extensions, see page 84.

Critical wear surfaces are specially heat-treated and hardened to service high-strength bolts used to fasten track plates on all types of power equipment.

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Drive End Diam. B	Nose Diam C	Overall Lgth. D	Opening Depth. E	

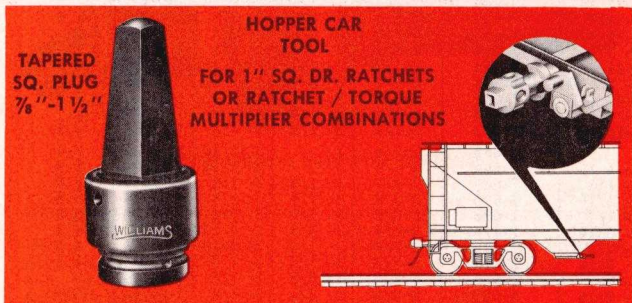
STANDARD LENGTH TRACK BOLT SOCKETS
SINGLE HEXAGON OPENINGS-Copper Colored Finish

3/4	7-624TB	2	1-7/16	2-1/16	9/16	1.1
13/16	7-626TB	2	1-1/2	2-3/16	39/64	1.1
7/8	7-628TB	2	1-17/32	2-3/16	39/64	1.2
15/16	7-630TB	2	1-19/32	2-3/16	23/32	1.2
1	7-632TB	2	1-3/4	2-1/4	35/64	1.3
1-1/8	7-636TB	2-1/8	1-13/16	2-3/8	13/16	1.5
1-5/16	7-642TB	2-1/8	2-1/16	2-9/16	49/64	1.6
1-1/2	7-648TB	2-1/4	2-5/16	2-5/8	7/8	1.9

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs.
		Drive End Diam. B	Nose Diam C	Overall Lgth. D	Opening Depth. E	

BOLT CLEARANCE LENGTH TRACK BOLT SOCKETS
SINGLE HEXAGON OPENINGS-Copper Colored Finish

7/8	17-628TB	2	1-7/16	3	39/64	1.8
15/16	17-630TB	2	1-19/32	3	23/32	1.8
1	17-632TB	2	1-3/4	3	35/64	1.8
1-1/8	17-636TB	2-1/8	1-13/16	3	13/16	2.0
1-5/16	17-642TB	2-1/8	2-1/16	3-1/2	49/64	2.1
1-1/2	17-648TB	2-1/4	2-5/16	3-1/2	7/8	2.5



No.	Overall Lgth.	Taper	Drive Size	Weight Ea., Lbs.
-----	---------------	-------	------------	------------------

RR-1HC 7-1/2 7/8 to 1-1/2 1" Sq. Drive 5.1

Unique tapered design assures accurate fit, even in battered drive pinion openings of sliding gate type hopper cars. One inch square drive opening fits hand ratchets, power tools or torque multiplier applications. Finished in industrial black. Critical wear surfaces are specially heat-treated and hardened to turn the most stubborn drive pinion. See page 56 for torque multiplier application.



ADAPTERS, EXTENSION AND UNIVERSAL JOINT

Male squares have thru Pin Holes

MILITARY DESCRIPTION: GGG-W-660-5, TYPE III, ADAPTER
GGG-W-660-5, TYPE II, EXTENSION GGG-W-660-5, TYPE IV, UNIV. JOINT

No.	Description	Square Female	Square Male	Length	Wgt. Ea., Lbs.
-----	-------------	---------------	-------------	--------	----------------

7-6	Adapter	1	3/4	3	1.8
7-8	Adapter	1	1-1/2	3-9/16	4.0
7-107	Extension	1	1	7	3.6
7-140	Universal Joint, O.D. 2-3/8", range 55°	1	1	4-3/8	2.9

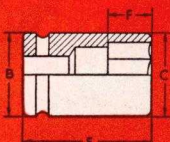


"8" SERIES 1-1/2 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES

1 1/2"

Nos. 8-642
to 8-660

No. 8-664

Nos. 8-668
to 8-6256Nos. 18-664
to 18-6256

Example of Order Nomenclature: "8-666 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

MILITARY DESCRIPTION: GGG-W-660-5, TYPE I, CLASS 1, STYLE A

1- 5/16	8-642	3-1/4	2-1/2	3-1/8	49/64	4.
1- 3/8	8-644	3-1/4	2-3/4	3-1/8	49/64	4.3
1- 7/16	8-646	3-1/4	2-3/4	3-1/8	49/64	4.4
1- 1/2	8-648	3-1/4	2-7/8	3-1/8	7/8	4.4
1- 5/8	8-652	3-1/4	3	3-1/8	7/8	4.5
1-11/16	8-654	3-1/4	3	3-1/8	1	4.4
1-13/16	8-658	3-1/4	3-1/8	3-1/4	1	5.
1- 7/8	8-660	3-1/4	3-1/8	3-1/4	1- 3/32	4.4
2	8-664	3-1/4	3-1/4	3-3/4	1- 3/32	5.6
2- 1/16	8-666	3-1/4	3-1/2	3-7/8	1-13/64	6.6
2- 1/8	8-668	3-1/4	3-1/2	3-7/8	1-13/64	6.6
2- 3/16	8-670	3-1/4	3-1/2	3-7/8	1-13/64	6.6
2- 1/4	8-672	3-1/4	3-3/4	4	1- 5/16	6.6
2- 3/8	8-676	3-1/4	3-7/8	4-1/8	1- 5/16	7.6
2- 7/16	8-678	3-1/4	3-7/8	4-1/8	1-25/64	7.
2- 9/16	8-682	3-1/4	4	4-1/4	1-25/64	7.9
2- 5/8	8-684	3-1/4	4-1/8	4-1/4	1- 1/2	8.3
2- 3/4	8-688	3-1/4	4-1/4	4-3/8	1- 1/2	8.8
2-15/16	8-694	3-1/4	4-1/2	4-1/2	1-39/64	9.5
3	8-696	3-1/4	4-1/2	4-5/8	1-23/32	9.5
3- 1/8	8-6100	3-1/4	4-3/4	4-5/8	1-23/32	11.4
3- 3/8	8-6108	3-1/4	5	4-5/8	1-59/64	11.
3- 1/2	8-6112	3-1/4	5-1/8	4-5/8	1-59/64	12.4
3-5/8	8-6116	3-1/4	5-1/2	5-1/16	2- 9/64	16.2
3-3/4	8-6120	3-1/4	5-1/2	5-1/16	2-15/64	15.5
3-7/8	8-6124	3-1/4	5-1/2	5-1/16	2- 5/16	14.7
4	8-6128	3-1/4	5-3/4	5-3/8	2-25/64	17.2
4-1/8	8-6132	3-1/4	5-3/4	5-3/8	2-31/64	16.4
4-1/4	8-6136	3-1/4	6	5-7/8	2- 9/16	20.0

Sockets marked * are Non-Stock, available on special order only.

*4-3/8	8-6140	3-1/4	6	5-7/8	2-41/64	19.0
4-1/2	8-6144	3-1/4	6-1/2	6-1/4	2-47/64	25.7
4-5/8	8-6148	3-1/4	6-1/2	6-1/4	2-13/16	24.5
*4-3/4	8-6152	3-1/4	6-3/4	6-1/4	2-57/64	26.7
4-7/8	8-6156	3-1/4	7	6-3/4	2-63/64	31.8
5	8-6160	3-1/4	7-1/4	6-3/4	3- 1/16	34.5
5-3/8	8-6172	3-1/4	7-3/4	7	3- 5/16	40.2
*5-3/4	8-6184	3-1/4	8-1/4	7	3- 9/16	44.9
*6-1/8	8-6196	3-1/4	8-3/4	7-1/4	3-13/16	52.0
*6-1/2	8-6208	3-1/4	9-1/4	7-1/2	4- 1/16	59.7
*6-7/8	8-6220	3-1/4	9-3/4	7-3/4	4- 5/16	68.0
*7-1/4	8-6232	3-1/4	10	8	4- 9/16	70.5
*7-5/8	8-6244	3-1/4	10-3/4	8-1/4	4-13/16	87.7
*8	8-6256	3-1/4	11	8-3/8	5- 1/16	88.8

For Retainer Pins and "O" Rings to fit above Sockets, see page 84.

Example of Order Nomenclature: "18-6128 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

BOLT CLEARANCE LENGTH SINGLE HEXAGON OPENINGS Industrial Black Finish

Sockets marked * are Non-Stock, available on special order only.

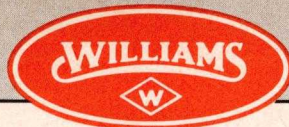
2	18-664	3-1/4	3-1/4	6-1/8	1- 3/32	9.6
*2- 1/16	18-666	3-1/4	3-1/2	6-1/8	1-13/64	11.0
*2- 1/8	18-668	3-1/4	3-1/2	6-1/8	1-13/64	10.8
2- 3/16	18-670	3-1/4	3-1/2	6-1/8	1-13/64	10.5
*2- 1/4	18-672	3-1/4	3-3/4	6-1/8	1- 5/16	12.0
2- 3/8	18-676	3-1/4	3-7/8	6-1/8	1- 5/16	12.4
*2- 7/16	18-678	3-1/4	3-7/8	6-1/8	1-25/64	12.1
*2- 9/16	18-682	3-1/4	4	6-3/8	1-25/64	13.0
2- 5/8	18-684	3-1/4	4-1/4	6-3/8	1- 1/2	13.7
2- 3/4	18-688	3-1/4	4-1/4	6-3/8	1- 1/2	14.1
*2-15/16	18-694	3-1/4	4-1/2	6-7/8	1-39/64	16.6
3	18-696	3-1/4	4-1/2	6-7/8	1-23/32	16.2
3- 1/8	18-6100	3-1/4	4-3/4	7-1/8	1-23/32	18.6
*3- 3/8	18-6108	3-1/4	5	7-1/8	1-59/64	19.7
3- 1/2	18-6112	3-1/4	5-1/8	7-1/8	1-59/64	20.2
*3- 5/8	18-6116	3-1/4	5-1/2	7-5/8	2- 9/64	25.9
3- 3/4	18-6120	3-1/4	5-1/2	7-5/8	2-15/64	24.6
3- 7/8	18-6124	3-1/4	5-1/2	7-5/8	2- 5/16	23.4
*4	18-6128	3-1/4	5-3/4	8-1/4	2-25/64	28.2
*4- 1/8	18-6132	3-1/4	5-3/4	8-1/4	2-31/64	26.7
*4- 1/4	18-6136	3-1/4	6	8-1/2	2- 9/16	30.5
*4- 3/8	18-6140	3-1/4	6	8-1/2	2-41/64	28.8
4- 1/2	18-6144	3-1/4	6-1/2	8-3/4	2-47/64	37.9
*4- 5/8	18-6148	3-1/4	6-1/2	8-3/4	2-13/16	36.1
*4- 3/4	18-6152	3-1/4	6-3/4	8-7/8	2-57/64	40.1
*4- 7/8	18-6156	3-1/4	7	9- 2/8	2-63/64	44.4
*5	18-6160	3-1/4	7-1/4	9-1/8	3- 1/16	49.0
*5- 3/8	18-6172	3-1/4	7-3/4	9-3/8	3- 5/16	56.7
*5- 3/4	18-6184	3-1/4	8-1/4	9-5/8	3- 9/16	65.3
*6- 1/8	18-6196	3-1/4	8-3/4	9-7/8	3-13/16	74.8
*6- 1/2	18-6208	3-1/4	9-1/4	10-1/8	4- 1/16	85.2
*6- 7/8	18-6220	3-1/4	9-3/4	10-1/4	4- 5/16	94.6
*7- 1/4	18-6232	3-1/4	10	10-3/8	4- 9/16	95.6
*7- 5/8	18-6244	3-1/4	10-3/4	10-5/8	4-13/16	117.5
*8	18-6256	3-1/4	11	10-7/8	5- 1/16	120.0

ADAPTER



Male square has thru pin hole

No.	Description	Square Female	Square Male	Length	Wgt. Each, Lbs.
8-7	Adapter.....	1-1/2	1	4	9.0

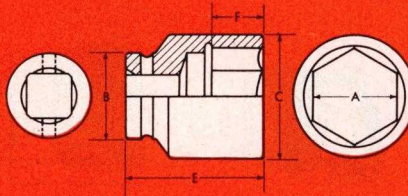


2 1/2"

"9" SERIES-2-1/2 Inch SQUARE DRIVE-POWER DRIVE SOCKETS FOR ALL TYPES OF POWER WRENCHES



Standard Length



Bolt Clearance Length

Example of Order Nomenclature: "9-6172 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

STANDARD LENGTH
SINGLE HEXAGON OPENINGS
Industrial Black Finish

Sockets marked * are Non-Stock, available on special order only.

*3-7/16	9-6110	5	5-3/8	5- 3/8	2- 1/64	20.0
3-1/2	9-6112	5	5-3/8	5- 3/8	2- 1/16	20.1
*3-5/8	9-6116	5	5-5/8	5-13/16	2- 9/64	23.2
3-3/4	9-6120	5	5-5/8	5-13/16	2-15/64	22.5
3-7/8	9-6124	5	5-5/8	5-13/16	2- 5/16	21.7
4	9-6128	5	6	6- 1/8	2-25/64	25.7
4-1/8	9-6132	5	6	6- 1/8	2-31/64	24.9
4-1/4	9-6136	5	6	6- 5/8	2- 9/16	26.0
*4-3/8	9-6140	5	6-1/4	6- 5/8	2-41/64	27.8
4-1/2	9-6144	5	6-1/2	7	2-47/64	31.7
4-5/8	9-6148	5	6-1/2	7	2-13/16	30.5
*4-3/4	9-6152	5	6-3/4	7	2-57/64	32.8
*4-7/8	9-6156	5	7	7- 1/2	2-63/64	37.8
*5	9-6160	5	7-1/4	7- 1/2	3- 1/16	40.6
5-3/8	9-6172	5	8	7- 3/4	3- 5/16	51.3
*5-3/4	9-6184	5	8-5/8	7- 3/4	3- 9/16	58.6
*6-1/8	9-6196	5	9	8	3-13/16	63.7
*6-1/2	9-6208	5	9-1/2	8- 1/4	4- 1/16	72.2
*6-7/8	9-6220	5	10	8- 1/2	4- 5/16	79.6
*7-1/4	9-6232	5	10-1/4	8- 3/4	4- 9/16	84.0
*7-5/8	9-6244	5	11-1/4	9	4-13/16	110.3
*8	9-6256	5	11-1/4	9- 1/8	5- 1/16	103.3

Example of Order Nomenclature: "19-6128 SOCKET"

Nominal Opening A	No.	Nominal Dimensions				Weight Each, Lbs. Approx.
		Diam. Drive End B	Diam. Nose C	Length Overall E	Depth Opening F	

BOLT CLEARANCE LENGTH
SINGLE HEXAGON OPENINGS
Industrial Black Finish

The following sockets are Non-Stock, available on special order only.

3-7/16	19-6110	5	5-3/8	7- 5/8	2- 1/64	29.0
3-1/2	19-6112	5	5-3/8	7- 5/8	2- 1/16	28.5
3-5/8	19-6116	5	5-5/8	8- 1/16	2- 9/64	33.1
3-3/4	19-6120	5	5-5/8	8- 1/16	2-15/64	31.3
3-7/8	19-6124	5	5-5/8	8- 1/16	2- 5/16	30.1
4	19-6128	5	6	8- 3/8	2-25/64	35.8
4-1/8	19-6132	5	6	8- 3/8	2-31/64	34.4
4-1/4	19-6136	5	6-1/4	8- 7/8	2- 9/16	35.0
4-3/8	19-6140	5	6-1/4	8- 7/8	2-41/64	37.9
4-1/2	19-6144	5	6-1/2	9- 1/4	2-47/64	42.7
4-5/8	19-6148	5	6-1/2	9- 1/4	2-13/16	40.7
4-3/4	19-6152	5	6-3/4	9- 1/4	2-57/64	44.3
4-7/8	19-6156	5	7	9- 3/4	2-63/64	50.4
5	19-6160	5	7-1/4	9- 3/4	3- 1/16	54.5

RETAINER PINS and "O" RINGS

FOR 3/4", 1", 1-1/2", 2-1/2" SQUARE DRIVES



Example of Order Nomenclature: "6-2B PIN, 7-1C RING"

"O" Rings are specially designed for resistance to oil and grease. Retainer Pins are made of selected steel—oil finished. Retainer Pins and "O" Rings are packaged separately, 24 of each to a box.

Square Drive Size	Socket and Extension Nos.	Retainer Pins			"O" Type Rings	
		No.	Diam.	Length	No.	Diam.
3/4"	6-620 thru 6-638	6-2B	3/16	1-1/8	6-1A	1-7/16
	6-640 thru 6-654	6-2C	3/16	1-1/2	6-1A	1-7/16
	6-420 thru 6-426	6-2B	3/16	1-1/8	6-1A	1-7/16
	6-826 thru 6-830	6-2B	3/16	1-1/8	6-1A	1-7/16
	6-832 thru 6-846	6-2C	3/16	1-1/2	6-1A	1-7/16
	16-620 thru 16-638	6-2B	3/16	1-1/8	6-1A	1-7/16
	16-640 thru 16-652	6-2C	3/16	1-1/2	6-1A	1-7/16
	Universal Joint	6-2C	3/16	1-1/2	6-1A	1-7/16
	All Adapters	6-2C	3/16	1-1/2	6-1A	1-7/16
	All Extensions	6-2C	3/16	1-1/2	6-1A	1-7/16
	7-624 thru 7-6116	7-2D	3/16	1-7/8	7-1B	1-3/4
	7-6118 thru 7-6184	7-2F	3/16	2-7/8	7-1C	2-7/8
1"	7-426 thru 7-888	7-2D	3/16	1-7/8	7-1B	1-3/4
	17-628 thru 17-676	7-2D	3/16	1-7/8	7-1B	1-3/4
	17-678 thru 17-6184	7-2F	3/16	2-7/8	7-1C	2-7/8
	Universal Joint	7-2D	3/16	1-7/8	7-1B	1-3/4
	Adapter	7-2D	3/16	1-7/8	7-1B	1-3/4
	Extensions	7-2D	3/16	1-7/8	7-1B	1-3/4
1-1/2"	Fit all sizes	8-2E	1/4	2-7/8	8-1C	2-7/8
2-1/2"	Fit all sizes	9-2G	5/16	4-1/2	9-1D	4-1/8

For Retainer Pins and "O" Rings to fit above Sockets, see table above.

REPLACEMENT PLUNGER PARTS

FOR 1/4", 3/8", 1/2", 5/8" SQUARE DRIVES



Pin Plunger



Spring



Plug

Sets consisting of a plunger, spring and brass plug are packed 24 sets to a box.

Example of Order Nomenclature: "2-1P SET"

Type Plunger	Set Number for Square Drive Size			
	1/4"	3/8"	1/2"	5/8"
Pin	0-1P	2-1P	4-1P	5-1P

**FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS**

Ask for Product Information Sheet A-215 on Soft Face Hammers containing handy selection chart. Also A-216 on Flange Jacks containing valuable information on servicing various classes of pipe, types of flange joints and facings.

WILLIAMS

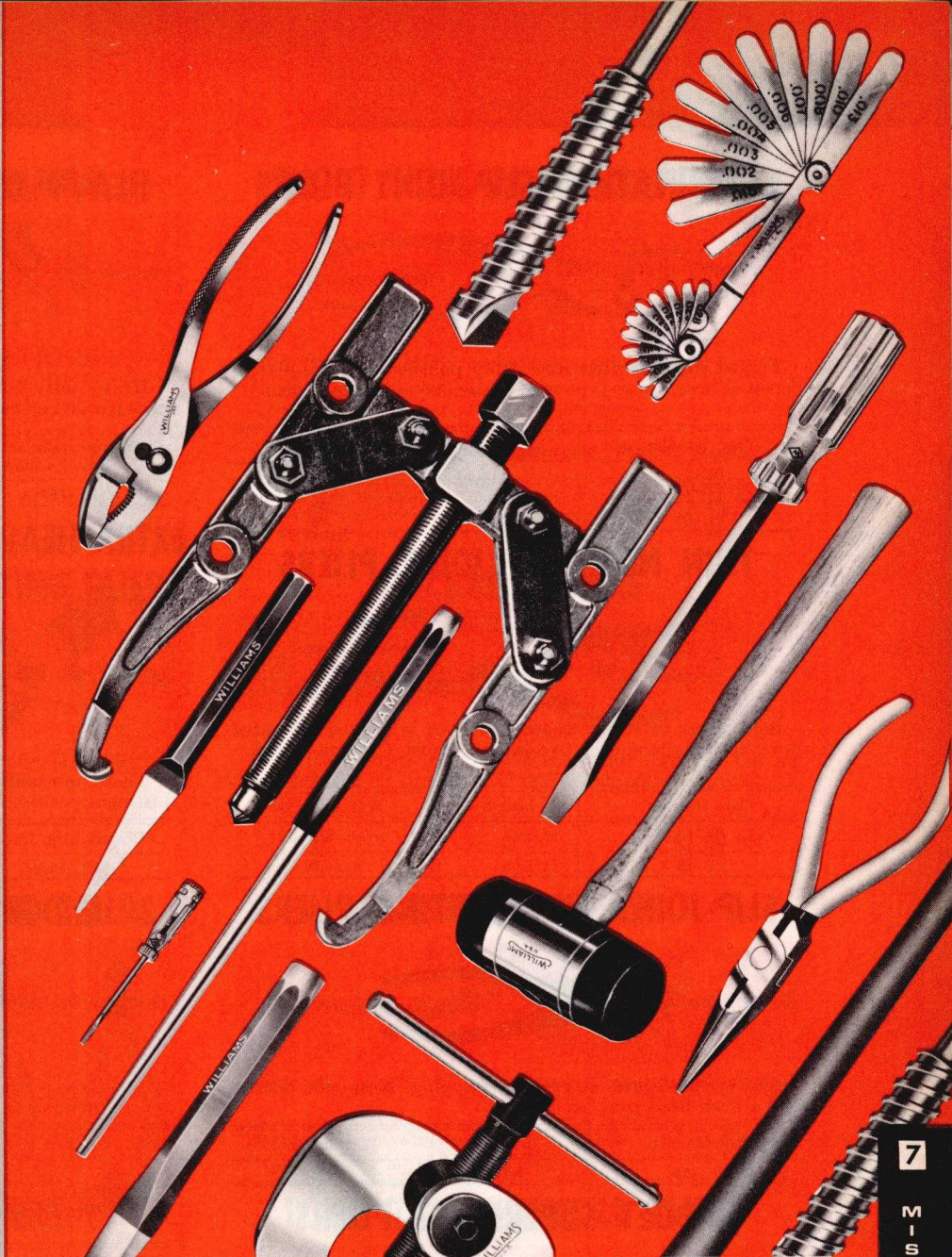


**THIS IS
THE TEAM
THAT DELIVERS**



TOOLPOWER

**WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE**



7

MISCELLANEOUS HAND TOOLS

Section 7 MISCELLANEOUS HAND TOOLS

**SAFETY
TIP**

Turning fasteners with pliers rounds their corners, setting up an unsafe condition. Use pliers for gripping irregular shapes. Make sure cutting tool edges are kept sharp to avoid slippage and possible injury.





COMBINATION SLIP-JOINT PLIERS



Forged from selected steel, fully polished, chrome-plated. Serrated jaws, shear-type wire cutter, two jaw positions.
MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE II, CLASS 2, STYLE A

Plain Handles	Length	Wgt. Ea., Lbs.
PL-5	5	.27
PL-6	6	.44
PL-8	8	.53
PL-10	10	.88

THIN NOSE SLIP-JOINT PLIERS



Slim noses to reach where clearance is limited. Serrated jaws, shear-type cutter, two jaw positions. Chrome-plated.
MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE II, CLASS 2, STYLE B

Plain Handles	Length	Wgt. Ea., Lbs.
PL-15	5	.25
PL-16	6	.36
PL-18	8	.60

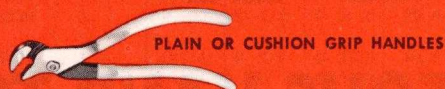
SLIP-JOINT SIDE CUTTING PLIERS



Flat serrated jaws at nose for gripping. Keen side cutters and a flush head rivet on one side.

Plain Handles	Length	Wgt. Ea., Lbs.
PL-370	7-1/2	.53

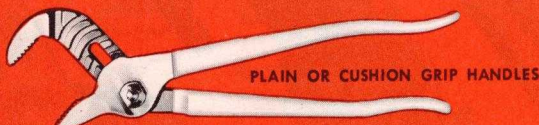
MIDGET SUPERJOINT PLIERS



Efficient for wiring, panel, switchboard, radio, and other delicate work. Cushion grips are yellow vinyl. Serrated jaws.
MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE II, CLASS 1, STYLE A

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-1519	PL-1519C	5	.13

UTILITY SUPERJOINT PLIERS

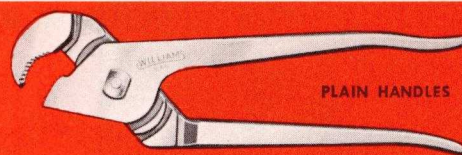


Very efficient for general service. Superjoint is designed to hold jaws parallel at most important openings. Drop-forged from selected steel. Cushion grips are yellow vinyl. Serrated jaws.

MILITARY DESCRIPTION: GGG-00471D-1, TYPE II, CLASS 1, STYLE A

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-1520	PL-1520C	10	.75

HEAVY DUTY SUPERJOINT PLIERS



Heavy duty construction. Superjoint is designed to hold jaws parallel at most important opening. Serrated jaws.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE II, CLASS 1, STYLE A

Plain Handles	Length	Wgt. Ea., Lbs.
PL-1521A	10	1.

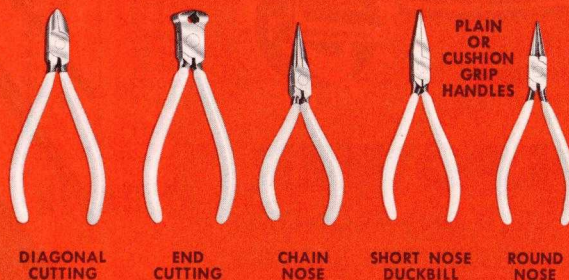
EXTRA HEAVY DUTY SUPERJOINT PLIERS



These unusually rugged, drop-forged pliers have seven adjustment positions with a maximum opening of 2-7/8".

Cushion Grip Handles	Length	Wgt. Ea., Lbs.
PL-1522C	14	1.75

MIDGET ELECTRONIC PLIERS



Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
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MIDGET DIAGONAL CUTTING PLIERS

Drop-forged, selected steel. Cushion grips are yellow vinyl.
MILITARY DESCRIPTION: GGG-00468, TYPE I, CLASS 1

PLM-1	PLM-1C	Length	Wgt. Ea., Lbs.
.....	PLM-1CS with Spring	4-1/4	.13
		4-1/4	.13

MIDGET END CUTTING NIPPERS

High leverage, semi-flush cutting edges.

MILITARY DESCRIPTION: GGG-N-350A-4, TYPE I, CLASS 2, STYLE A

PLM-2	PLM-2C	Length	Wgt. Ea., Lbs.
		4-1/2	.17

MIDGET CHAIN NOSE PLIERS

Smooth, slender jaws taper to a needle point.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE B

PLM-3	PLM-3C	Length	Wgt. Ea., Lbs.
		4-1/2	.15

MIDGET SHORT NOSE DUCKBILL PLIERS

Flat, wide jaws for strong gripping. Smooth jaws.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE V, CLASS 2

PLM-4	PLM-4C	Length	Wgt. Ea., Lbs.
		4-1/2	.15

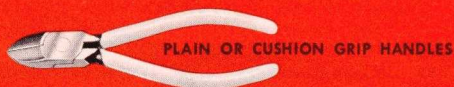
MIDGET ROUND NOSE PLIERS

Tapered, round jaws form accurate loops.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE X

PLM-5	PLM-5C	Length	Wgt. Ea., Lbs.
		4-3/4	.15

DIAGONAL CUTTING PLIERS



Rugged, semi-flush cutting edges. Excellent leverage, thin jaws for limited places. Drop-forged. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00468, TYPE I, CLASS 1

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PLM-1	PLM-1C	4-1/4	.13
PL-44	PL-44C	4-1/2	.19
PL-45	PL-45C	5	.25
PL-46	PL-46C	6	.40
PL-47	PL-47C	7-1/4	.52

SHORT NOSE DUCKBILL PLIERS

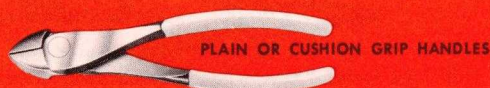


Drop-forged. PLM-4C has flat, wide, smooth jaws. Cushion grips are yellow vinyl.

Example of Order Nomenclature: "PLM-4C PLIERS"

Cushion Grip Handles	Length	Wgt. Ea., Lbs.
PLM-4C	4-1/2	.15

HIGH LEVERAGE DIAG. CUTTING PLIERS



Joint close to short jaws and long handles offer added leverage and easier cutting. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00468, TYPE III

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-57	PL-57C	7	.50

DIAGONAL FLUSH CUTTING PLIERS



Narrow, pointed nose, semi-flush edges for close cutting. Lightweight, easy-to-use. Coil spring keeps jaws open.

Plain Handles	Cushion Grip Handles	Length	Wgt. Ea., Lbs.
PL-40	PL-40CS with Spring	5	.25

END CUTTING NIPPERS



These drop-forged end nippers have carefully matched, sharp cutting edges for semi-flush cuts. Ample throat clearance.

MILITARY DESCRIPTION: GGG-N-350A-4, TYPE I, CLASS 2, STYLE A

Plain Handles	Length	Wgt. Ea., Lbs.
PLM-2	4-1/2	.17
PL-166	6-1/2	.52
PL-167	7-1/2	.71

ROUND NOSE PLIERS

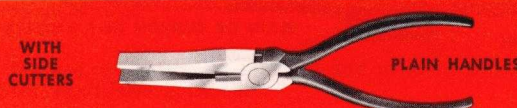


Both jaws rounded and tapered to accurately form loops and rings of wire and flat stock.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE X

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PLM-5	PLM-5C	4-3/4	.15

DUCKBILL PLIERS



Long reach, squared jaws 2-3/16" inside length. Tips are checker-milled for firm grip. Drop-forged, polished jaws.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE V, CLASS 3, STYLE B

Plain Handles	Length	Wgt. Ea., Lbs.
PL-143	6-1/4	.29

DUCKBILL PLIERS

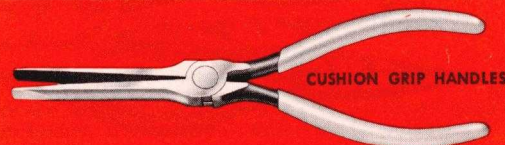


Wide, thin jaws 2-1/4" inside length. Grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XV, CLASS 1

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-146	PL-146C	6-1/2	.33

LONG THIN DUCKBILL PLIERS



Smooth jaws, 2-5/8" inside length, are polished to very thin edges for reaching into tight places. Grips are yellow vinyl.

Cushion Grip Handles	Length	Wgt. Ea., Lbs.
PL-144C	7-1/4	.33

HIGH LEVERAGE SHORT DUCKBILL PLIERS

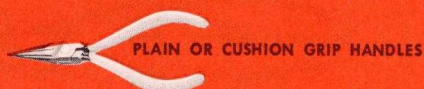


Flat, checker-milled jaw tips for more positive gripping. Drop-forged, polished heads. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XV, CLASS 2

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-149	PL-149C	8	.42

SHORT CHAIN NOSE PLIERS



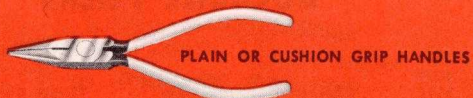
Smooth, slender jaws taper to a needle point. Drop-forged, polished heads. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE B

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PLM-3	PLM-3C	4-1/2	.15

SHORT CHAIN NOSE PLIERS

WITH
SIDE
CUTTERS



Short jaws with checker-milled tips provide positive grip. Drop-forged, polished heads. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 2, STYLE A

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-95	PL-95C	5	.23

LONG CHAIN NOSE PLIERS



Slender jaws, 2-3/16" long inside, taper to 3/32". Tips are checker-milled. Drop-forged, polished heads. Yellow grips.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE B

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-75	PL-75C	6-1/2	.29

LONG CHAIN NOSE PLIERS

WITH
SIDE
CUTTERS



Slender jaws, 2-7/32" long inside, taper to 3/32". Tips are checker-milled. Drop-forged, polished heads. Yellow grips.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE A

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-76	PL-76C	6-1/2	.29

EXTRA LONG CHAIN NOSE PLIERS



Slender jaws, 2-21/32" long inside, taper to 1/8". Tips are checker-milled. Drop-forged, polished heads. Yellow grips.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE B

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-78	PL-78C	7	.35

EXTRA LONG CHAIN NOSE PLIERS

WITH
SIDE
CUTTERS

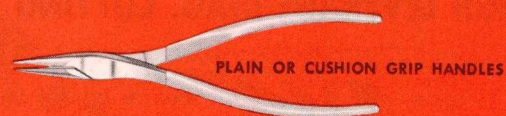


Slender jaws, 2-17/32" long inside, taper to 1/8". Tips are checker-milled. Drop-forged, polished heads. Yellow grips.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 1, STYLE A

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-77	PL-77C	7	.35

SHORT CHAIN NOSE HI-LEVERAGE PLIERS

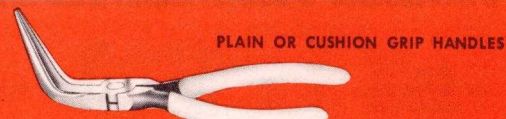


Short, slender jaws with checker-milled 1/8" tips. Long handles for powerful grip. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XI, CLASS 2, STYLE B

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-98	PL-98C	8	.40

CURVED CHAIN NOSE PLIERS



Sturdy, curved jaws have 1-1/2" reach tapered to 1/8". Tips are checker-milled. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XII, CLASS 1

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-126	PL-126C	5-1/2	.29

SHORT NEEDLE NOSE PLIERS

WITH
SPRING



Serrated jaws, 15/16" long inside, taper to 1/32". Excellent for work on miniature parts. Drop-forged, polished heads. Spring holds jaws open until pressure is applied.

Plain Handles	Length	Wgt. Ea., Lbs.
PL-114CS	4-1/2	.10

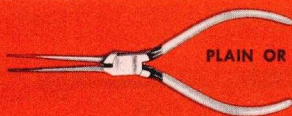
NEEDLE NOSE PLIERS



Sturdy jaws, 1-7/8" long inside, taper to 5/64". Tips are checker-milled. These pliers have unusual gripping ability without distortion. Cushion grips are yellow vinyl.

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-74	PL-74C	7	.29

LONG NEEDLE NOSE PLIERS



PLAIN OR CUSHION GRIP HANDLES

Very slim jaws, 2-5/16" long inside, taper to 3/32". Tips are checker-milled. These pliers have excellent gripping ability without distortion. Cushion grips are yellow vinyl.

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-116	PL-116C	6	.17

CURVED LONG NEEDLE NOSE PLIERS

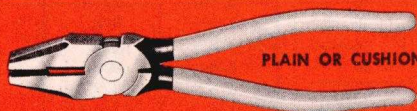


PLAIN OR CUSHION GRIP HANDLES

Sturdy, curved jaws have 1-1/2" reach tapered to 1/16". Tips are checker-milled. Cushion grips are yellow vinyl.

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-127	PL-127C	5	.20

ELECTRICIAN'S SIDE CUTTING PLIERS



PLAIN OR CUSHION GRIP HANDLES

Checker-milled jaws with keen side cutters. Insulation crusher built-in. Cushion grips are yellow vinyl.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE IX, CLASS 1, STYLE A AND B

Plain Handles	Cushion Grips	Length	Wgt. Ea., Lbs.
PL-203	PL-203C	6	.50
PL-204	PL-204C	7	.65
PL-205	PL-205C	8	.81

LINEMEN'S SIDE CUTTING PLIERS



PLAIN HANDLES

Heavy duty, checker-milled jaws. Keen side cutters. Insulation crusher built-in. Drop-forged polished heads.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE IX, CLASS 1, STYLE A

Plain Handles	Length	Wgt. Ea., Lbs.
PL-206	6	.46
PL-207	7	.65
PL-208	8	.98

NEW ENGLAND HEAD LINEMEN'S PLIERS



PLAIN OR INSULATED HANDLES

Special offset rivet and longer handles give powerful leverage. Checker-milled jaws with keen side cutters and insulation crusher. Drop-forged, polished heads.

Plain Handles	Insulated Handles	Length	Wgt. Ea., Lbs.
PL-209	PL-209X	9	1.1

ANGLE NOSE BATTERY PLIERS



PLAIN HANDLES

Offset jaws allow ample hand clearance of battery terminal work. Milled teeth assure positive grip.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE I

Plain Handles	Length	Wgt. Ea., Lbs.
PL-67	7	.50

BRAKE SPRING PLIERS



PLAIN HANDLES

For use on passenger cars, light and medium trucks. Satin finish; head faces polished.

MILITARY DESCRIPTION: GGG-P-00474, TYPE II, CLASS 2, STYLE I

Plain Handles	Length	Wgt. Ea., Lbs.
PL-1517A	13	.73

FENCE PLIERS and STAPLE PULLER



PLAIN HANDLES

For installing wire fence. Head has hammer on one jaw, starting and puller point on the other.

MILITARY DESCRIPTION: GGG-P-00471D-1, TYPE XVI

Plain Handles	Length	Wgt. Ea., Lbs.
PL-190	10	1.4

LOCK RING PLIERS



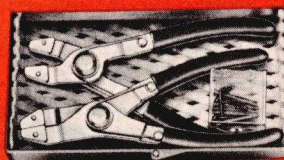
PLAIN HANDLES

Pliers are designed for spreading "Horse Shoe" snap lock rings on brakes, transmissions, differentials, pulleys, etc.

MILITARY DESCRIPTION: GGG-P-00480B-1, TYPE III, CLASS 2

Plain Handles	Length	Wgt. Ea., Lbs.
PL-1515	8	.38

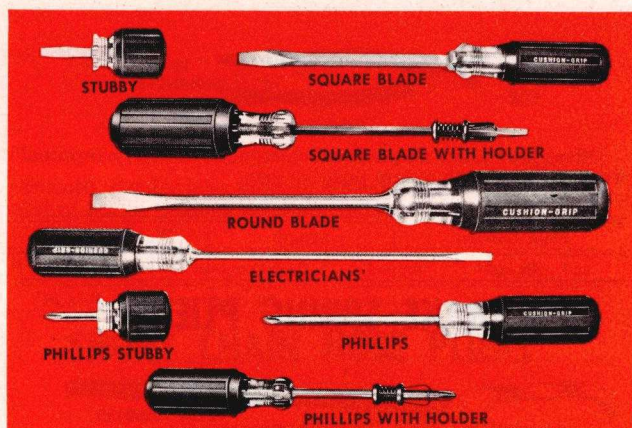
SNAP RING PLIER SET



Three basic tip diameters handle a wide variety of external and internal rings for shafts 3/8" to 1-1/4". Interchangeable tips are heat-treated for long wear. Pliers have red vinyl handle grips. Set packed in plastic box.

Set No.	Contents			Wgt. Ea. Lbs.
	Pliers	Angle Tips	Straight Tips	
PL-1600C	1 PL-1600C-1 Intr. 1 PL-1600C-2 Extr.	2 Pr 90°x.035 Dia. 2 Pr 45°x.045 Dia.	2 Pr .045 Dia. 2 Pr .060 Dia.	.65
PL-1600C-3	Interchangeable Tip Set, 2 each as listed above			.05

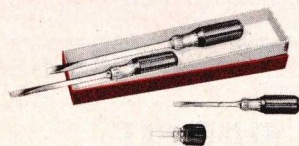
CUSHION GRIP SCREWDRIVERS



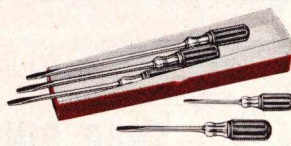
Cushion Grips are interlocked with the plastic handles through a tongue and groove or spline type design. They offer unusual, non-slip turning power. Alloy steel blades are chrome plated.

Example of Order Nomenclature: "DEG-46 SCREWDRIVER"
MILITARY DESCRIPTION: GGG-S-1210-5

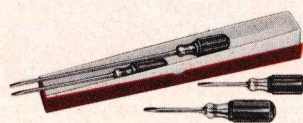
No.	Blade Length	Stock Size	Tip Width	Weight Each, Lbs.
MECHANICS' SQUARE BLADE				
DSG-4	4	1/4	9/32	.19
DSG-6	6	5/16	5/16	.38
DSG-8	8	3/8	3/8	.59
DSG-62	1-1/4	1/4	1/4	.14
MECHANICS' SQUARE BLADE WITH SCREW HOLDER				
DSHG-44	4	1/8	1/8	.07
DSHG-46	4	3/16	3/16	.15
DSHG-64	6	1/8	1/8	.10
DSHG-76	7	3/16	3/16	.21
MECHANICS' ROUND BLADE				
DRG-24	4	1/4	1/4	.19
DRG-26	6	5/16	5/16	.33
DRG-28	8	3/8	3/8	.53
DRG-30	10	3/8	3/8	.58
DRG-32	12	3/8	3/8	.66
ELECTRICIANS' ROUND BLADE				
DEG-43	3	3/16	3/16	.09
DEG-46	6	3/16	3/16	.14
DEG-48	8	3/16	3/16	.15
DEG-50	10	3/16	3/16	.17
PHILLIPS				
DPG-1	3	3/16	No. 1	.06
DPG-2	4	1/4	No. 2	.19
DPG-3	6	5/16	No. 3	.31
DPG-62	1-1/4	1/4	No. 2	.09
PHILLIPS WITH SCREW HOLDER				
DPHG-1	3	3/16	No. 1	.13
DPHG-2	4	1/4	No. 2	.19



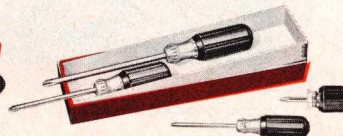
SET No. DSG-4
4 Screwdrivers in Cardboard Box
 Weight, 1.7 lbs.
 Contains one each Nos. DSG-4, DSG-6, DSG-8 and DSG-62.



SET No. DRGS-5
5 Screwdrivers in Cardboard Box
 Weight, 2.3 lbs.
 Contains one each Nos. DRG-24, DRG-26, DRG-28, DRG-30 and DRG-32.

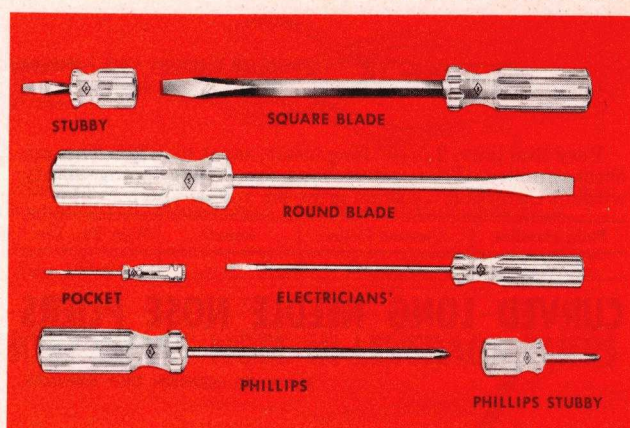


SET No. DEGS-6A
4 Screwdrivers in Cardboard Box
 Weight, .6 lb.
 Contains one each Nos. DEG-43, DEG-46, DEG-48 and DEG-50.



SET No. DPGS-4
4 Screwdrivers in Cardboard Box
 Weight, .7 lb.
 Contains one each Nos. DPG-1, DPG-2, DPG-3 and DPG-62.

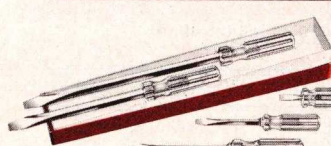
PLASTIC HANDLE SCREWDRIVERS



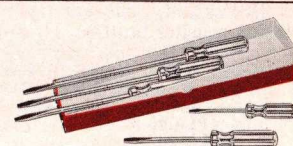
Fully tempered, polished alloy steel blades are solidly anchored in comfortable plastic handles. Blade point flats and edges are accurately ground and gauged for true fit.

Example of Order Nomenclature: "DP-2 SCREWDRIVER"
MILITARY DESCRIPTION: GGG-S-1210-5

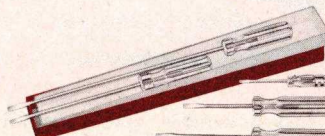
No.	Blade Length	Stock Size	Tip Width	Weight Each, Lbs.
MECHANICS' SQUARE BLADE				
DS-4	4	1/4	5/16	.19
DS-6	6	5/16	5/16	.38
DS-6B	6	3/8	3/8	.50
DS-8	8	3/8	3/8	.59
DS-10	10	3/8	3/8	.65
DS-12	12	3/8	3/8	.75
DS-62	1-1/4	1/4	1/4	.14
MECHANICS' ROUND BLADE				
DR-24	4	1/4	1/4	.19
DR-26	6	5/16	5/16	.33
DR-28	8	3/8	3/8	.53
DR-30	10	3/8	3/8	.58
DR-32	12	3/8	3/8	.66
ELECTRICIANS' ROUND BLADE				
DE-43	3	3/16	3/16	.09
DE-46	6	3/16	3/16	.14
DE-48	8	3/16	3/16	.15
DE-50	10	3/16	3/16	.17
DE-52	2	1/8	1/8	.03
PHILLIPS				
DP-0	3	1/8	No. 0	.04
DP-1	3	3/16	No. 1	.06
DP-2	4	1/4	No. 2	.19
DP-3	6	5/16	No. 3	.31
DP-4	8	3/8	No. 4	.53
DP-62	1-1/4	1/4	No. 2	.09



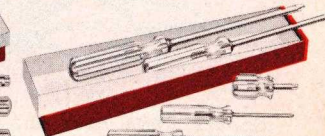
SET No. DSS-1
5 Screwdrivers in Cardboard Box
 Weight, 2 lbs.
 Contains one each Nos. DS-4, DS-6, DS-8, DS-12 and DS-62.



SET No. DRS-4
5 Screwdrivers in Cardboard Box
 Weight, 2.2 lbs.
 Contains one each Nos. DR-24, DR-26, DR-28, DR-30 and DR-32.



SET No. DES-3A
5 Screwdrivers in Cardboard Box
 Weight, .7 lb.
 Contains one each Nos. DE-43, DE-46, DE-48, DE-50 and DE-52.



SET No. DPS-5
5 Screwdrivers in Cardboard Box
 Weight, 1.1 lbs.
 Contains one each Nos. DP-1, DP-2, DP-3, DP-4 and DP-62.



FEELER GAUGES



All blades are made from selected Swedish Steel. They are 12" long by 1/2" wide and are packaged 6 to an envelope.

MILITARY DESCRIPTION: GGG-G-17B, TYPE VIII, CLASS 4, STYLE A

Blade Thickness	Number	Wgt., Lbs. Per 1/2 Doz.	Blade Thickness	Number	Wgt., Lbs. Per 1/2 Doz.
.0015	GL-0015	.021	.015	GL-015	.125
.002	GL-002	.025	.016	GL-016	.125
.003	GL-003	.033	.017	GL-017	.125
.004	GL-004	.044	.018	GL-018	.187
.005	GL-005	.056	.020	GL-020	.187
.006	GL-006	.062	.022	GL-022	.187
.007	GL-007	.062	.024	GL-024	.187
.008	GL-008	.062	.025	GL-025	.187
.009	GL-009	.062	.028	GL-028	.187
.010	GL-010	.062	.030	GL-030	.250
.011	GL-011	.062	.032	GL-032	.250
.012	GL-012	.062	.035	GL-035	.312
.013	GL-013	.125	.040	GL-040	.375
.014	GL-014	.125			

SCREW EXTRACTORS



For quick, easy removal of broken screws, bolts, studs or other threaded forms. A hole is first drilled into the broken stem and the correct size Williams Extractor is then inserted.

MILITARY DESCRIPTION: GGG-E-936C, TYPE I, CLASS I, STYLE A

Ex-tractor No.	Size Drill to Use	For Use on Screw Sizes	For Use on Pipe Sizes	Diam. Small End	Diam. Large End	Lgth. of Flute	Ex-treme Lgth.	Wgt. Ea., Lbs.
EX-1	5/64	#8 to 1/4		.054	5/32	11/16	2	.02
EX-2	7/64	#12 to 3/16		.080	3/16	7/8	2-3/8	.02
EX-3	5/32	3/16 to 1/2		1/8	1/4	1	2-3/4	.03
EX-4	1/4	1/2 to 3/4	1/8	3/16	11/32	1-3/16	3	.06
EX-5	17/64	3/4 to 1	1/8 & 1/4	15/64	7/16	1-9/16	3-3/8	.06
EX-6	13/32	1 to 1 1/8	3/8	3/8	19/32	1-3/4	3-3/4	.19
EX-7	17/32	1 1/8 to 1 1/2	1/2	1/2	3/4	2-1/8	4-1/8	.38
EX-8	13/16	1 1/2 to 1 3/4	3/4	3/4	1	2-1/8	4-3/8	.69
EX-9	1-1/16	1 3/4 to 2 1/8	1	1	1-9/32	2-1/4	4-5/8	1.2
EX-10	1-5/16	2 to 2 1/2	1-1/4	1-1/4	1-9/16	2-1/2	5	1.8
EX-11	1-9/16	2 1/2 to 3	1-1/2	1-1/2	1-7/8	3	5-5/8	2.9
EX-12	1-15/16	3 to 3 1/2	2	1-7/8	2-5/16	3-1/2	6-1/4	4.4

SET No. EXS-221

6 Extractors, 6 High Speed Drills On Wooden Stand

Weight, 1.1 lbs.

A handy set for bench or tool chest. Correct size drill for most efficient use of screw extractor is always conveniently at hand.

Ext'r.	Description	Drill	Description
EX-1	.054" small, 5/32" large diam	TD- 5/64	5/64" Diameter
EX-2	.080" small, 3/16" large diam	TD- 7/64	7/64" Diameter
EX-3	1/8" small, 1/4" large diam	TD- 5/32	5/32" Diameter
EX-4	3/16" small, 1/2" large diam	TD- 1/4	1/4" Diameter
EX-5	1/2" small, 3/4" large diam	TD-17/64	17/64" Diameter
EX-6	3/4" small, 1 1/2" large diam	TD-13/32	13/32" Diameter

SET EXS-205

5 Tools in Plastic Case

Weight, .5 lb.

For use on screws up to 3/16" and pipe up to 1/4" diameter.



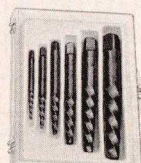
One	Description
EX-1	For #8 to 1/4 screws
EX-2	For #12 to 3/16 screws
EX-3	For 3/16 to 1/2 screws
EX-4	For 1/2 to 3/4 screws, 1/8 pipe
EX-5	For 3/4 to 1 screws, 1/4 pipe

SET EXS-206

6 Tools in Plastic Case

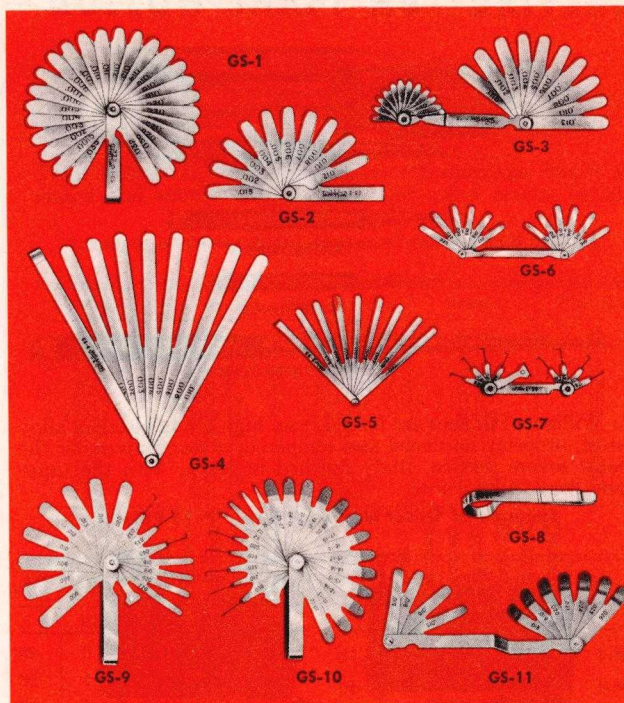
Weight, .63 lb.

For use on screws up to 5/8" and pipe up to 3/8" diameter.



One	Description
EX-1	For #8 to 1/4 screws
EX-2	For #12 to 3/16 screws
EX-3	For 3/16 to 1/2 screws
EX-4	For 1/2 to 3/4 screws, 1/8 pipe
EX-5	For 3/4 to 1 screws, 1/4 pipe
EX-6	For 1 to 1 1/2 screws, 3/8 pipe

FEELER GAUGE SETS



Sets have knurled lock-nuts which allows the user to select the required blade size and then lock it into position.

MILITARY DESCRIPTION: SETS GS-1, GS-2, GS-5, GGG-G-17B, TYPE VIII, CLASS 1, STYLE A, B; SET GS-7, GGG-G-17B, TYPE IX, CLASS 2, STYLE A

SET No. GS-1 Master Feeler Gauge. 25 Blades 3-5/16 x 1/2" in the following thicknesses—.0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .018, .020, .022, .024, .025, .028, .030, .032 and .035. Wgt., .22 lb.

SET No. GS-2 Standard Feeler Gauge. 10 Blades 3-5/16 x 1/2" in the following thicknesses—.002, .003, .004, .005, .006, .007, .008, .010, .012 and .015. Weight, .09 lb.

SET No. GS-3 Combination Feeler Gauge. 10 Blades 3 x 1/2" in the following thicknesses—.002, .003, .004, .005, .006, .007, .008, .010, .013, .015; 12 Blades 1-3/4 x 1/4" in the following thicknesses—.011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .022 and .025. Weight, .13 lb.

SET No. GS-4 Piston Feeler Gauge. 8 Blades 9 x 1/2" in the following thicknesses—.002, .003, .004, .005, .006, .008, .010 and .015. Weight, .16 lb.

SET No. GS-5 Brake Feeler Gauge. 9 Blades 4 x 1/4" in the following thicknesses—.002, .004, .005, .006, .007, .008, .010, .012 and .015. Weight, .03 lb.

SET No. GS-6 Ignition Feeler Gauge. 12 Blades 1-3/4 x 1/4" in the following thicknesses—.011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .022 and .025. Weight, .09 lb.

SET No. GS-7 Spark Plug Gap Feeler Gauge. 8 90° Wires—.022, .025, .028, .030, .032, .035, .038, .040 and electrode bender. Weight, .06 lb.

No. GS-8 Feeler Gauge Stock Holder. 4-3/4" long. Holds one 12" Blade, any thickness. Weight, .09 lb.

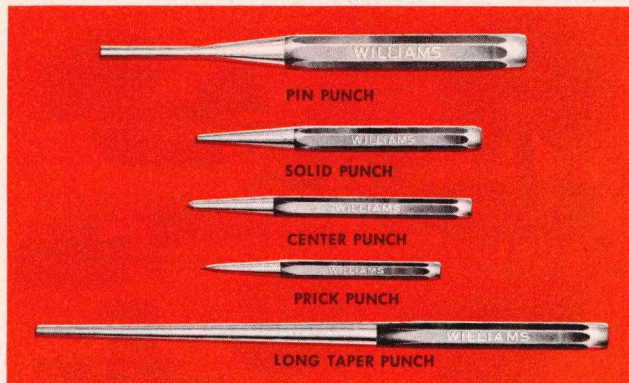
SET No. GS-9 Special Chevrolet Feeler Gauge. 8 Blades 3-5/16 x 1/2" in the following thicknesses—.006, .007, .008, .010, .012, .013, .015, .020; 4 Blades 3-5/16 x 1/4" in the following thicknesses—.016, .018, .020, .022; 3 90° Wires—.032, .035, .040; and one electrode bender. Weight, .16 lb.

SET No. GS-10 Special Ford Feeler Gauge. 13 Step Ground GO-NO-GO Blades 3-5/16 x 1/2" in the following thicknesses—.010-.012, .011-.013, .012-.014, .013-.015, .014-.016, .015-.017, .016-.018, .017-.019, .018-.020, .019-.021, .021-.023, .024-.026, .025-.027; 4 Blades 3-5/16 x 1/4" in the following thicknesses—.015, .016, .020, .025; 2 Straight Wires—.017 and .030; 3 90° Wires—.025, .028, .035 and one electrode bender. Weight, .19 lb.

SET No. GS-11 Combination O.H.V. Feeler Gauge. 11 Blades 3-5/16 x 1/2" in the following thicknesses—Flat, .015, .016, .018, .019—Offset with 45° step, .018, .019, .020, .021, .024, .025, .026. Especially useful on Ford and Mercury. Weight, .19 lb.



PUNCHES



Williams Punches are forged from high grade hexagon alloy steel, properly hardened and tempered to stand up under the most severe service. Body finished in black, with the taper and head full polished.

Example of Order Nomenclature: "P-15 PUNCH"

MILITARY DESCRIPTION: GGG-P-831E1

No.	Point Diam.	Stock Size	Lgth.	Wt. Ea.
PIN PUNCHES				
P-3	3/32	5/16	6	.16
P-4	1/8	5/16	6	.16
P-5	5/32	5/16	6	.16
P-6	3/16	1/2	6	.26
P-8	1/4	1/2	6	.28
P-10	5/16	1/2	6	.28
LONG TAPER PUNCHES				
P-25	5/32	3/8	9	.24
P-26	3/16	1/2	10	.44
P-28	1/4	5/8	12	.83
P-28A	1/4	3/4	15	1.6
P-29	5/16	5/8	16	1.1
No.	Point Diam.	Stock Size	Lgth.	Wt. Ea.
SOLID PUNCHES				
P-13	3/32	1/2	6	.28
P-14	1/8	1/2	6	.28
P-15	5/32	1/2	6	.28
P-16	3/16	1/2	6	.29
P-17	1/4	1/2	6	.30
PRICK PUNCHES				
P-30	.....	3/8	5	.14
P-32	.....	1/2	6	.27
CENTER PUNCHES				
P-38	.....	1/4	3-1/2	.05
P-39	.....	5/16	4-1/4	.08
P-40	.....	3/8	5	.14
P-42	.....	1/2	6	.31

CHISELS

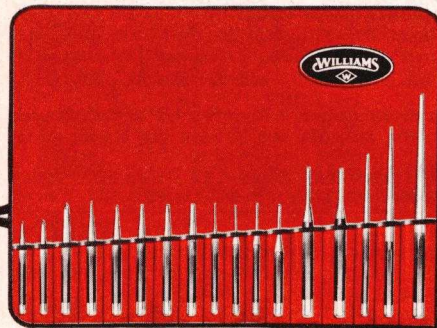


Williams Chisels are forged from hexagon alloy steel, hardened and tempered. Body finished in black with full polished ends. Cutting edges of All Steel Wood Chisels are ground and polished to razor-like sharpness.

Example of Order Nomenclature: "C-46 CHISEL"

MILITARY DESCRIPTION: GGG-C-313A-2

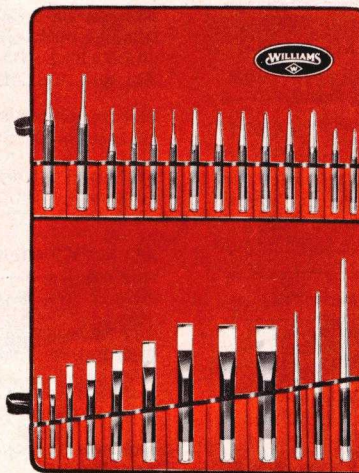
No.	Width of Cut	Stock Size	Lgth.	Wt. Ea.
COLD or FLAT CHISELS				
C-8	1/4	1/4	5	.07
C-10	5/16	1/4	5	.08
C-12	3/8	5/16	5-1/2	.11
C-16	1/2	7/16	6	.24
C-20	5/8	1/2	6-1/2	.37
C-24	3/4	5/8	7	.61
C-28	7/8	3/4	7-1/2	.89
C-32	1	7/8	8	1.3
C-36	1-1/8	1	8	1.7
EXTRA LONG COLD CHISELS				
C-120	5/8	1/2	12	.70
C-124	3/4	3/4	12	1.5
C-125	3/4	3/4	15	1.9
C-126	3/4	3/4	18	2.3
C-132	1	7/8	12	2.
C-133	1	7/8	18	3.2
No.	Width of Cut	Stock Size	Lgth.	Wt. Ea.
CAPE CHISELS				
C-40	3/16	3/8	6	.16
C-42	1/4	1/2	6-1/4	.27
C-44	5/16	1/2	6-1/4	.30
C-46	3/8	5/8	7	.52
DIAMOND POINT CHISELS				
C-60	1/4	3/8	5-1/4	.18
C-62	3/8	5/8	7	.56
C-64	1/2	3/4	7	.80
C-66	5/8	3/4	8	.85
ROUND NOSE CHISELS				
C-72	1/4	1/2	6-1/4	.28
C-73	5/16	1/2	6-1/4	.31
C-74	3/8	5/8	7	.52
C-75	1/2	3/4	8	.83
ALL STEEL WOOD CHISELS				
C-94	1/2	3/8	7-1/2	.22
C-96	3/4	1/2	9	.44
C-98	1	5/8	9-1/2	.71
C-99	1-1/8	5/8	10	.75



A complete assortment of pin, long taper, solid, prick, center punches.

SET No. PS-17R
17 Punches in K-18 Roll Kit
Weight, 6.4 lbs.

One Ea.	Description	One Ea.	Description
P-3	Pin, 6"x3/32" pt	P-16	Sld, 6"x3/16" pt
P-4	Pin, 6"x1/8" pt	P-17	Sld 6"x1/4" pt
P-5	Pin, 6"x5/32" pt	P-25	Tpr, 9"x3/32" pt
P-6	Pin, 6"x3/16" pt	P-26	Tpr, 10"x3/16" pt
P-8	Pin, 6"x1/4" pt	P-28	Tpr, 12"x1/4" pt
P-10	Pin, 6"x5/16" pt	P-30	Prick Punch, 5"
P-13	Sld, 6"x3/32" pt	P-40	Ctr Punch 5"
P-14	Sld, 6"x1/8" pt	P-42	Ctr Punch, 6"
P-15	Sld, 6"x3/32" pt	.....	.....



SET No. PC-26R
17 Punches and 9 Chisels in K-17 Roll Kit
Weight, 12.4 lbs.

One	Description	One	Description
P-3	Pin, 6"x3/32"	P-28	Taper, 12"x1/4"
P-4	Pin, 6"x1/8"	P-30	Prick Punch, 5"
P-5	Pin, 6"x5/32"	P-40	Ctr Punch, 5"
P-6	Pin, 6"x3/16"	P-42	Ctr Punch, 6"
P-8	Pin, 6"x1/4"	C-8	Cold, 4 3/4"x1 1/4"
P-10	Pin, 6"x5/16"	C-10	Cold, 5"x3/16"
P-13	Solid, 6"x3/32"	C-12	Cold, 5 1/2"x3/8"
P-14	Solid, 6"x1/8"	C-16	Cold, 6"x1/2"
P-15	Solid, 6"x5/32"	C-20	Cold, 6 1/2"x3/8"
P-16	Solid, 6"x3/16"	C-24	Cold, 7"x3/4"
P-17	Solid, 6"x1/4"	C-28	Cold, 8"x1/2"
P-25	Taper, 9"x3/32"	C-32	Cold, 8"x1"
P-26	Taper, 10"x3/16"	C-36	Cold, 8"x1 1/8"



SET No. CS-8R
8 Chisels
in K-8 Roll Kit
Weight, 3 lbs.

SET No. CS-9R
9 Chisels
in K-16 Roll Kit
Weight, 6.5 lbs.

One Ea.	Description	One Ea.	Description
SET No. CS-8R			
C-40	Cape, 6"x3/16"	C-60	Dia Pt, 5 1/4"x1 1/4"
C-42	Cape, 6 1/4"x1/4"	C-62	Dia Pt, 7"x3/8"
C-44	Cape, 6 1/4"x3/16"	C-72	Rd Ns, 6 1/4"x1 1/4"
C-46	Cape, 7"x3/8"	C-74	Rd Ns, 8"x3/8"
SET No. CS-9R			
C-8	Chisel, 4 3/4"x1 1/4"	C-24	Chisel, 7"x3/4"
C-10	Chisel, 5"x5/16"	C-28	Chisel, 8"x3/8"
C-12	Chisel, 5 1/2"x3/8"	C-32	Chisel, 8"x1"
C-16	Chisel, 6"x1/2"	C-36	Chisel, 8"x1 1/8"
C-20	Chisel, 6 1/2"x3/8"	.....	.....



PINCH and ROLL BARS



Williams Rivet Buster, Pinch Bars and Roll Bars are forged from hexagon alloy steel, hardened and tempered. The Rivet Buster is designed for cutting hardened rivet heads, a great time saver when used instead of the ordinary chisel.

Example of Order Nomenclature: "C-82 BAR"

No.	Width of Cut	Stock Size	Length	Weight Each, Lbs.
RIVET BUSTER				
C-422	3/4	3/4	12	1.5
PINCH BARS				
C-80	3/4	1/2	14	.75
C-82	1	5/8	16	1.3
C-83	7/8	3/4	20	2.1
ROLL BARS				
C-709	.....	3/8	9-1/4	.27
C-715	.....	1/2	15-1/2	.84
C-718	.....	5/8	18	1.5



SET No. CCS-4R
4 Cape Chisels in K-5 Roll Kit
Weight, 1.4 lbs.

Set contains one each Nos. C-40, C-42, C-44 and C-46 as described on Page 92.



SET No. CDS-4R
4 Diamond Point Chisels in K-5 Roll Kit
Weight, 2.6 lbs.

Set contains one each Nos. C-60, C-62, C-64 and C-66 as described on Page 92.



SET No. CRS-4R
4 Round Nose Chisels in K-5 Roll Kit
Weight, 2.1 lbs.

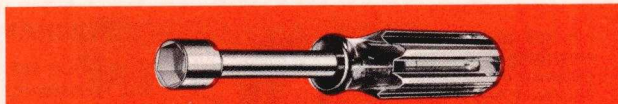
Set contains one each Nos. C-72, C-73, C-74 and C-75 as described on Page 92.



SET No. PS-4R
4 Center Punches in K-5 Roll Kit
Weight, .81 lbs.

Set contains one each Nos. P-38, P-39, P-40 and P-42 as described on Page 92.

HOLLOW-SHAFT NUT DRIVERS

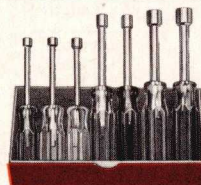


These hollow-shaft nut drivers have hex openings. Shafts are plated and solidly anchored in color-coded plastic handles.

Example of Order Nomenclature: "ND-12 NUT DRIVER"

MILITARY DESCRIPTION: GGG-W-00657, TYPE I

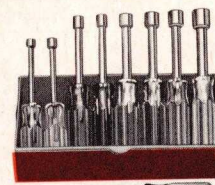
Opening	No.	Handle Color	Length	Wgt. Ea.
3/16	ND-6	Black	6-1/4	.13
7/32	ND-7	Brown	6-1/4	.13
1/4	ND-8	Red	7-1/4	.17
9/32	ND-9	Orange	7-1/4	.19
5/16	ND-10	Amber	7-1/4	.19
11/32	ND-11	Green	7-1/4	.19
3/8	ND-12	Blue	7-1/4	.19
7/16	ND-14	Brown	7-1/4	.21
1/2	ND-16	Red	7-1/4	.22
9/16	ND-18	Orange	7-1/4	.23
5/8	ND-20	Amber	7-5/8	.30



SET No. NDS-7
7 Nut Drivers
In Cardboard Box

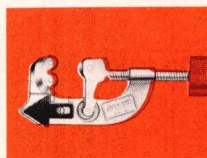
Weight, 1.4 lbs.

One each Nos. ND-8, ND-9, ND-10, ND-11, ND-12, ND-14 and ND-16.



SET No. NDS-11
11 Nut Drivers in Cardboard Box
Weight, 2.1 lbs.

One each Nos. ND-6 thru ND-20, as listed above.

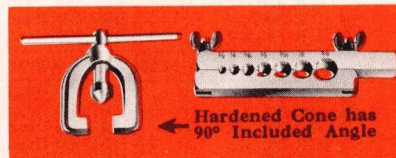
WILLIAMS
TUBE CUTTER and FLARING TOOL

No. TT-161 TUBE CUTTER
Weight, .75 lb.

MILITARY DESCRIPTION: GGG-C-00771C, TYPE II, CLASS 3

No. TT-161A CUTTER WHEEL
Weight, .25 lb.

This tool will cut copper, brass, bronze or similar tubing from 1/8 to 1" diameter. Heat-treated tool steel cutter wheel has razor edge to insure a clean cut. Reamer sets flush against tool when not in use, and turns to 90° angle during reaming operation. Chrome-plated body.



No. TT-162 FLARING TOOL
Total Weight, 2 lbs.

The Yoke type compressor is drop-forged and easily slips over the die block. The hardened floating cone will give an even, accurate flare and taper that will insure a tight joint. Sliding "T"-handle is 5-1/2" long for added leverage. Sizes are stamped on the respective dies. Seven threaded flaring dies with diameters for 3/16, 1/4, 5/16, 3/8, 7/16, 1/2 and 5/8 inches. Cadmium-plated finish.

SET No. TT-165
In TB-16 Metal Case
8-1/2" x 5-3/8" x 2-1/2"
Total Weight, 4.6 lbs.

One Ea.	Contents
TT-161	Tube Cutter
TT-161A	Extra Cutter Wheel
TT-162	Tube Flaring Tool





SOFT-FACE HAMMERS

TIPS ARE HIGHLY RESISTANT TO COMMON INDUSTRIAL SOLVENTS AND ACIDS.

THEY ARE NON-EXPLOSIVE AND ELECTRICALLY NON-CONDUCTIVE.

SIX TIP HARDNESSES SOFT TO EXTRA HARD



INTERCHANGEABLE TIPS

HANDLES ARE CAREFULLY FITTED AND PERMANENTLY WEDGED INTO HEAD

TOUGH, SECOND GROWTH WHITE HICKORY HANDLES WITH HARD, CLEAR FINISH

FRICITION FIT OF TAPERED TIP SEATS IN HEAD WELLS PREVENTS LOOSENING OF TIPS



MILITARY DESCRIPTION: GGG-H-33A-6, TYPE I, CLASS 3, STYLE D, DESIGN A AND DESIGN B

HSF-100, 150, 200, 250 and 300 have aluminum alloy heads. HSF-105, 155, 205, 255 and 305 have die-cast zinc-alloy heads. HSF-152 and 202 have chrome-plated brass heads and are shot-loaded, offering 30% more driving power with less worker fatigue. Bodies and Tips are shipped unassembled.

Example of Order Nomenclature: "HSF-150 HAMMER BODY"

No.	Weight Class	Head		Handle Length	Wgt. Ea.
		Diameter	Length		
HSF-100	5 oz.	1	2	11-3/8	.25
HSF-105	8 oz.	1	2	11-3/8	.38
HSF-150	3/4 lb.	1-1/2	2-3/8	13	.50
HSF-152	1-1/4 lb.	1-1/2	3-1/2	13	.88
HSF-155	1-1/4 lb.	1-1/2	2-3/8	13	.94
HSF-200	1-1/4 lb.	2	2-1/2	13	.81
HSF-202	2-1/2 lb.	2	4-5/8	13	1.8
HSF-205	2 lb.	2	2-1/2	13	1.6
HSF-250	2 lb.	2-1/2	3-1/4	15	1.6
HSF-255	4 lb.	2-1/2	3-1/4	13	3.1
HSF-300	3-1/2 lb.	3	3-3/4	14	2.4
HSF-305	6 lb.	3	3-3/4	14	5.1

REPLACEMENT HANDLES — WEDGE INCLUDED

No.	To Fit Hammer Number	Wgt. Ea. lbs.
FOR SOFT FACE HAMMERS		
HR-100	HSF-100 Head	.19
HR-105	HSF-105 Head	.19
HR-150	HSF-150 Head	.28
HR-155	HSF-155 Head	.28
HR-200	HSF-200 Head	.31
HR-205	HSF-205 Head	.31
HR-250	HSF-250 Head	.47
HR-255	HSF-255 Head	.44
HR-300	HSF-300 Head	.69
HR-305	HSF-305 Head	.69
FOR BALL PEIN HAMMERS WITH WOOD HANDLES		
HR-49	HBP-7-0 Head	.09
HR-50	HBP-5-0 Head	.11
HR-53	HBP-3-0 Head	.19
HR-56	HBP-2-0 Head	.22
HR-59	HBP-0 Head	.34
HR-63	HBP-2 Head	.39
HR-66	HBP-4 Head	.48
HR-69	HBP-6 Head	.58



TIPS ONLY

Example of Order Nomenclature: "HSF-20-T TIP"

No.	Diameter	Hardness	Color	Wgt. Ea., lbs.
HSF-10-S	1	Soft	Brown	.05
HSF-10-M	1	Medium	Red	.05
HSF-10-T	1	Tough	Green	.05
HSF-10-N	1	Med. Hard	Cream	.05
HSF-10-H	1	Hard	Black	.05
HSF-10-XH	1	Extra Hard	Yellow	.05
HSF-15-S	1-1/2	Soft	Brown	.14
HSF-15-M	1-1/2	Medium	Red	.14
HSF-15-T	1-1/2	Tough	Green	.14
HSF-15-N	1-1/2	Med. Hard	Cream	.14
HSF-15-H	1-1/2	Hard	Black	.14
HSF-15-XH	1-1/2	Extra Hard	Yellow	.14
HSF-20-S	2	Soft	Brown	.27
HSF-20-M	2	Medium	Red	.27
HSF-20-T	2	Tough	Green	.27
HSF-20-N	2	Med. Hard	Cream	.27
HSF-20-H	2	Hard	Black	.27
HSF-20-XH	2	Extra Hard	Yellow	.27
HSF-25-S	2-1/2	Soft	Brown	.44
HSF-25-M	2-1/2	Medium	Red	.44
HSF-25-T	2-1/2	Tough	Green	.44
HSF-25-N	2-1/2	Med. Hard	Cream	.44
HSF-25-H	2-1/2	Hard	Black	.44
HSF-25-XH	2-1/2	Extra Hard	Yellow	.44
HSF-30-S	3	Soft	Brown	.66
HSF-30-M	3	Medium	Red	.66
HSF-30-T	3	Tough	Green	.66
HSF-30-N	3	Med. Hard	Cream	.66
HSF-30-H	3	Hard	Black	.66
HSF-30-XH	3	Extra Hard	Yellow	.66

BALL PEIN HAMMERS



WOOD HANDLES

Drop-forged from specially selected steel and carefully heat-treated for uniform, dependable strength and hardness. Handles, made from second growth white hickory and clear lacquered, are permanently wedged into the heads.

MILITARY DESCRIPTION: GGG-H-86C-2, TYPE II, CLASS 1, STYLE A

Number	Weight Class	Length	Wgt. Ea. Lbs.
HBP-7-0	2 oz.	9-7/16	.23
HBP-5-0	4 oz.	9-7/16	.33
HBP-3-0	8 oz.	11-5/8	.64
HBP-2-0	12 oz.	13-5/16	1.1
HBP-0	1 lb.	14-1/4	1.3
HBP-2	1-1/2 lbs.	14-7/8	2.
HBP-4	2 lbs.	15-1/2	2.4
HBP-6	2-1/2 lbs.	16-11/16	3.2



FIBERGLASS HANDLES

Forged from high grade carbon steel, specially heat-treated to assure exact degree of hardness. Faces, peins and bells are polished. Long lasting fiberglass handles. Black vinyl grips provide firm hand hold.

MILITARY DESCRIPTION: GGG-H-86C-2, TYPE II, CLASS 1, STYLE B

Number	Weight Class	Length	Wgt. Ea. Lbs.
HP-2	2 oz.	10	.38
HP-4	4 oz.	11	.56
HP-8	8 oz.	11	.81
HP-12	12 oz.	12-1/2	1.1
HP-16	1 lb.	13	1.4
HP-24	1-1/2 lb.	14	1.9
HP-32	2 lb.	14	2.4
HP-40	2-1/2 lb.	16	3.0



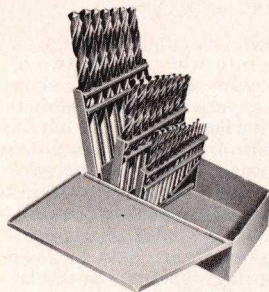
HIGH SPEED DRILLS



Williams High Speed Jobber Length Drills are suitable for all general purposes. They have bright finished margins and shanks, black flutes and black lands. Fast cutting speeds will not affect their hardness. Sizes 1/64 to 9/32 inclusive are packaged 12 to an envelope, all others 6 to an envelope.

Example of Order Nomenclature: "TD-5/64 DRILL"

No. and Diameter	Decimal Equivalent	Length Overall	Length of Twist	Wgt. Per Doz., Lbs.
TD- 1/64	.0156	3/4	3/16	.01
TD- 1/32	.0312	1-3/8	1/2	.01
TD- 3/64	.0469	1-3/4	3/4	.02
TD- 1/16	.0625	1-7/8	7/8	.03
TD- 5/64	.0781	2	1	.05
TD- 3/32	.0937	2-1/4	1- 1/4	.06
TD- 7/64	.1094	2-5/8	1- 1/2	.09
TD- 1/8	.1250	2-3/4	1- 5/8	.11
TD- 9/64	.1406	2-7/8	1- 3/4	.13
TD- 5/32	.1562	3-1/8	2	.17
TD-11/64	.1719	3-1/4	2- 1/8	.20
TD- 3/16	.1875	3-1/2	2- 5/16	.23
TD-13/64	.2031	3-5/8	2- 7/16	.28
TD- 7/32	.2187	3-3/4	2- 1/2	.33
TD-15/64	.2344	3-7/8	2- 5/8	.39
TD- 1/4	.2500	4	2- 3/4	.45
TD-17/64	.2656	4-1/8	2- 7/8	.56
TD- 9/32	.2812	4-1/4	2-15/16	.64
TD-19/64	.2969	4-3/8	3- 1/16	.70
TD- 5/16	.3125	4-1/2	3- 3/16	.86
TD-21/64	.3281	4-5/8	3- 5/16	.94
TD-11/32	.3437	4-3/4	3- 7/16	1.
TD-23/64	.3594	4-7/8	3- 1/2	1.1
TD- 3/8	.3750	5	3- 5/8	1.3
TD-25/64	.3906	5-1/8	3- 3/4	1.3
TD-13/32	.4062	5-1/4	3- 7/8	1.5
TD-27/64	.4219	5-3/8	3-15/16	1.6
TD- 7/16	.4375	5-1/2	4- 1/16	1.8
TD-29/64	.4531	5-5/8	4- 3/16	1.9
TD-15/32	.4687	5-3/4	4- 5/16	2.1
TD-31/64	.4844	5-7/8	4- 3/8	2.3
TD- 1/2	.5000	6	4- 1/2	2.4



HIGH SPEED DRILL SETS

Drills are held in panels which fold into the case like pages in a book. Each compartment is properly marked with drill size and its decimal inch equivalent. Drills will not fall out of place.

Example of Order Nomenclature: "TDS-15 DRILL SET"

No.	No. of Drills	Drill Sizes	Size of Case	Wgt. Each, Lbs.
TDS-13	13	1/16 to 1/4 by 64ths	11/16x2x4-5/8	.5
TDS-15	15	1/16 to 1/2 by 32nds	1-3/16x4x7	3.6
TDS-21	21	1/16 to 3/8 by 64ths	1x4x6	1.8
TDS-29	29	1/16 to 1/2 by 64ths	1-5/8 x4x7	2.3

MASONRY DRILLS



REGULAR LENGTH ROTARY BITS

Williams Carbide Tipped Masonry Drills easily penetrate concrete, cement, brick, slate, marble, stone and all types of masonry materials. They produce clean, sharp-edged, accurate holes. Individually packed in cardboard tubes, sharpening instructions included.

Example of Order Nomenclature: "CMD-9/16 DRILL"

No. and Diameter	Actual Diameter	Extreme Length	Shank Diameter	Shank Length	Weight Each, Lbs.
CMD- 1/8	.130	2-1/2	1/8	1-1/4	.01
CMD- 3/16	.198	3	3/16	1-1/4	.03
CMD- 1/4	.260	4	1/4	1-3/8	.05
CMD- 5/16	.328	4	1/4	1-1/2	.05
CMD- 3/8	.390	4	1/4	1-1/2	.06
CMD- 7/16	.458	6	3/8	1-5/8	.13
CMD- 1/2	.525	6	3/8	1-5/8	.19
CMD- 9/16	.587	6	7/16	1-5/8	.25
CMD- 5/8	.650	6	1/2	1-5/8	.31
CMD-11/16	.713	6	1/2	1-5/8	.38
CMD- 3/4	.775	6	1/2	1-5/8	.44
CMD- 7/8	.905	6	1/2	1-5/8	.56
CMD-1	1.030	6	1/2	1-5/8	.75
CMD-1-1/8	1.160	6	1/2	1-5/8	.75
CMD-1-1/4	1.285	10	1/2	1-5/8	1.7
CMD-1-1/2	1.535	10	1/2	1-5/8	2.3

EXTRA LENGTH ROTARY BITS



Williams Extra Length Carbide Tipped Masonry Drill Bits provide fast cutting action for deep hole drilling.

No. and Diameter	Actual Diameter	Extreme Length	Shank Diameter	Flute Length	Weight Each, Lbs.
CMDL- 1/4	.260	12	1/4	9-3/4	.19
CMDL- 5/16	.328	12	1/4	9-3/4	.20
CMDL- 3/8	.390	12	5/16	9-3/4	.28
CMDL- 7/16	.458	12	3/8	9-3/4	.36
CMDL- 1/2	.525	12	3/8	9-3/4	.5
CMDL- 9/16	.587	12	7/16	9-3/4	.58
CMDL- 5/8	.650	12	1/2	9-3/4	.84
CMDL- 3/4	.775	12	1/2	9-3/4	1.1
CMDL- 7/8	.905	12	1/2	9-3/4	1.4
CMDL-1	1.030	12	1/2	9-3/4	1.8
CMDL-1-1/8	1.160	12	1/2	9-3/4	2.3
CMDX- 1/4	.260	18	1/4	15-3/4	.20
CMDX- 5/16	.328	18	1/4	15-3/4	.30
CMDX- 3/8	.390	18	5/16	15-3/4	.41
CMDX- 7/16	.458	18	3/8	15-3/4	.58
CMDX- 1/2	.525	18	3/8	15-3/4	.78
CMDX- 9/16	.587	18	7/16	15-3/4	1.
CMDX- 5/8	.650	18	1/2	15-3/4	1.3
CMDX- 3/4	.775	18	1/2	15-3/4	1.7
CMDX- 7/8	.905	18	1/2	15-3/4	2.1
CMDX-1	1.030	18	1/2	15-3/4	2.9
CMDX-1-1/8	1.160	18	1/2	15-3/4	3.7
CMDX-1-1/4	1.285	18	1/2	15-3/4	4.6
CMDX-1-1/2	1.535	18	1/2	15-3/4	6.8

MASONRY DRILL SETS - REGULAR LENGTH

SET No. CMD-2101

4 Drill Bits in Plastic Kit
Weight, .39 lb.

No. and Diameter	Actual Diameter	Shank Length
CMD-1/4	.260	1-3/8
CMD-5/16	.328	1-1/2
CMD-3/8	.390	1-1/2
CMD-1/2	.525	1-5/8

SET No. CMD-2102

6 Drill Bits in Plastic Kit
Weight, 1.1 lbs.

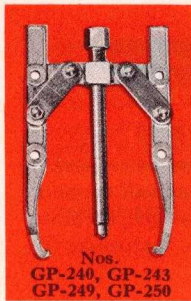
No. and Diameter	Actual Diameter	Shank Length
CMD-3/16	.198	1-1/4
CMD-1/4	.260	1-3/8
CMD-5/16	.328	1-1/2
CMD-3/8	.390	1-1/2
CMD-1/2	.525	1-5/8
CMD-5/8	.650	1-5/8

SET No. CMD-2103

6 Drill Bits in Plastic Kit
Weight, 1.5 lbs.

No. and Diameter	Actual Diameter	Shank Length
CMD-1/4	.260	1-3/8
CMD-5/16	.328	1-1/2
CMD-3/8	.390	1-1/2
CMD-1/2	.525	1-5/8
CMD-5/8	.650	1-5/8
CMD-3/4	.775	1-5/8

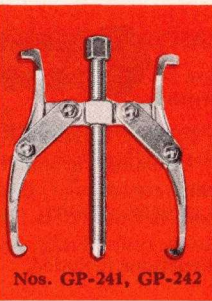
2-JAW PULLERS



NOTE:

No. GP-241 has plain hook at both ends of jaws.

No. GP-242 has slotted hooks on one end of jaws for hooking on to cap screws to remove gears and parts which have tapped holes.



The buttress type thread used on the forcing screw affords 1/3 more strength. The wide range of sizes and jaw styles provide maximum versatility.

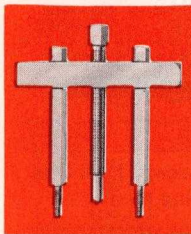
Forged from finest alloy steel, both body and jaws are heat-treated for utmost strength and durability.

Cadmium-plated finish. Individually packaged.

MILITARY DESCRIPTION: GGG-P-00781B-1, TYPE I, CLASS 1, STYLE A, B

No.	Maximum Spread Inches	Maximum Reach Inches	Length and Diameter of Forcing Screw	Capacity Tons	Weight Each, Lbs.
GP-240	0 to 4	3-3/8	3/8 x 4-1/4	1-1/4	1.
GP-241	0 to 6	3-1/4	5/8 x 6	4	2.
GP-242	0 to 8	5-1/2	3/4 x 8-5/16	7	4.3
GP-243	0 to 10	9	3/4 x 8-5/16	7	5.
GP-249	0 to 12	11	13/16 x 12	10	9.5
GP-250	0 to 14	15	13/16 x 12	10	11.7

GP-10 TIMING GEAR PULLER



Here is a very handy tool for pulling timing gears and all other gears that have tapped holes. The sliding jaws enable the tool to handle gears of all widths.

For extra service the 6-1/2 inch side screws are machined to take care of the most used thread sizes, 3/8"-16 and 5/16"-18. By using standard sizes of cap screws, the mechanic has a combination tool for pulling fan pulleys, and gears with tapped holes. Cadmium-plated finish.

No.	Length of Body	Length of Center Screw	Length of Side Screws	Weight Each, Lbs.
GP-10	6-1/2	5-1/2	5	2.3

BEARING SPLITTERS



The inside of the counter-bore is machined down to nearly a sharp edge, which allows the tool to be forced back of the bearing or gear by tightening the two nuts. The bearing is separated and removed with the aid of a gear puller or arbor press. Made from alloy steel. Cadmium-plated finish. Individually packaged.

* Pullers GP-242 or GP-243 can be used with this tool by gripping around outside.

MILITARY DESCRIPTION: GGG-P-00781B-1, TYPE XII

No.	Capacity	Hole Thread Size	Weight
GP-501	0 to 2-1/4	3/8-16	1.5
*GP-503	0 to 4-1/4	5/8-18	5.

GP-189A HARMONIC BALANCER PULLER



For pulling balancers, vibration dampers, gears with tapped holes. The four slots in the yoke allow use of this tool in either two or three hole applications.

Swivel design provides for full floating action thus preventing damage to the shaft ends.

Three sets of hardened side screws are furnished: two 3/8"-16 x 4" long, three 3/8"-24 x 2" long, three 5/16"-18 x 2" long. Forcing screw is 5/8"-18 x 6". Weight Each, 2.8 lbs.

3-JAW PULLERS



NOTE:

No. GP-244 has plain hook on both ends of jaws.

No. GP-245 has slotted hooks on one end of jaws for hooking on to cap screws to remove gears and parts which have tapped holes.



Williams 3-Jaw Pullers provide maximum strength and performance for the toughest pulling jobs, because their three strong jaws distribute a powerful 3-point, balanced force on the part being pulled.

Their popular size range adapts them to many uses in the proper maintenance of automobiles, trucks, tractors, farm equipment, airplanes and industrial machinery and equipment.

Forged from finest alloy steel, both body and jaws are heat-treated for utmost strength and durability.

Cadmium-plated finish. Individually packaged.

Example of Order Nomenclature: "GP-245 PULLER"

MILITARY DESCRIPTION: GGG-P-00781B-1, TYPE I, CLASS 2, STYLE A, B

No.	Maximum Spread Inches	Maximum Reach Inches	Length and Diameter of Forcing Screw	Capacity Tons	Weight Each, Lbs.
GP-244	0 to 6	3-1/4	5/8 x 6	4	2.5
GP-245	0 to 8	5-1/2	3/4 x 8-5/16	7	5.5
GP-246	0 to 10	9	3/4 x 8-5/16	7	6.5

WILLIAMS

GP-5 WHEEL PULLER

FOR REFRIGERATION SERVICE



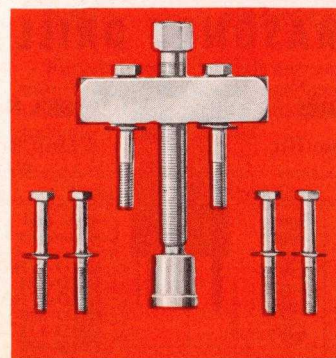
The body, forged from high tensile steel, has four sockets into which either two or all three of the arms may be placed in various positions, providing a combination of grips. Flywheels with even or odd numbers of spokes are pulled with equal ease. All three arms are necessary for odd-spoked wheels, while only two are needed for an even number of spokes. The pulling capacity is 7" diameter. Arms, processed from alloy steel, are held in place by an endless spring. They are instantly reversible by merely turning the arm in the socket.

Example of Order Nomenclature: "GP-5 PULLER"

No.	Capacity Diam.	Body Diam.	Length Arms	Weight Ea., Lbs.	Extra Parts		
GP-5	7	3-1/4	4-1/4	1.7	Arms	Screw	Spring

WILLIAMS

GP-187 STEERING WHEEL PULLER



Will remove steering wheels on most cars where the wheel is held by two cap screws and lock nut. Also handy on all types of gears and balancing plates with tapped holes.

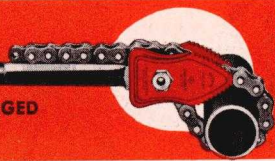
Three sets of hardened side screws: 5/16-24 x 3-1/2" long; 3/8-16 x 4" long; 5/16-18 x 4-1/2" long. Made from alloy steel. Cadmium-plated finish. Individually packaged. Weight each, 2.3 lbs.



CHAIN PIPE TONGS

VULCAN®

DROP-FORGED



The Original Vulcan,® introduced by Williams, is still the oil-fields' favorite tongs for general work. Chains swing from the center and can be used on either side of the jaws, thus reducing wear upon specific teeth. Heat-Treated Flat Link Chains are "proof-tested" to two-thirds of their breaking strain, to Military Standards. Jaws are orange baked enamel. Refer to Price List for replacement chains and parts.

Example of Order Nomenclature: "CT-12 TONG"

*MILITARY DESCRIPTION: GGG-W-00651D-1, TYPE III, CLASS A

No. with Flat Chain	CT-10	CT-11	CT-12	CT-13	CT-13½	CT-14	CT-15	*CT-16
Cap., Size Pipe	½-¾	½-1½	¾-2½	¾-4	1-6	1½-8	2-12	4-18
Extreme Length	13¾	20	27	37	44½	50½	64½	87
Wgt. each, Lbs.	2.	5.8	10.	17.	24.	31.	52.	137.
Chain Length	9½	13½	17½	22½	32	40½	55½	74½
Breaking Strain, Lb	5,070	9,400	13,800	17,600	20,100	22,000	31,000	56,000

No. with Cable Chain	CT-12-2	CT-13-2	CT-13½-2	CT-14-2	CT-15-2	CT-16-2
Chain Length	18	27	33½	42	57	76
Breaking Strain, Lb	9,000	12,500	14,300	15,700	21,800	40,000

WILLIAMS IMPROVED VULCAN®
CHAIN PIPE TONGS

DROP-FORGED



Jaws double-ended and reversible, are fastened with two tough steel studs. Chains swing from the center and can be used on either side of the jaws, thus reducing wear upon specific teeth. Heat-Treated Flat Link Chains are percentage "proof-tested" to two-thirds of their breaking strain, to Military Standards. Jaws are orange baked enamel. Refer to Price List for replacement chains and parts.

Example of Order Nomenclature: "CT-33½ TONG"

*MILITARY DESCRIPTION: GGG-W-00651D-1, TYPE III, CLASS A

Number	CT-30	CT-31	CT-32	*CT-33	*CT-33½	*CT-34	*CT-35
Capacity, Size Pipe, Inches	½-¾	½-1½	¾-2½	¾-4	1-6	1½-8	2-12
Extreme Length	13¾	20	27	37	44½	50½	64½
Weight each, Lbs.	2.	5.8	10.	17.	24.	31.	52.
Flat Link Chain Length	9½	13½	17½	22½	32	40½	55½
Breaking Strain, Lbs.	5,070	9,400	13,800	17,600	20,100	22,000	31,000

CHAIN WRENCHES



Handle is drop-forged from Selected Alloy Steel, heat-treated and chrome-plated. Successive bites can be taken without removing the wrench from the work. Ideal for use on close quarter applications in industry. Extra length chains on special order. Refer to Price List for replacement chains and parts.

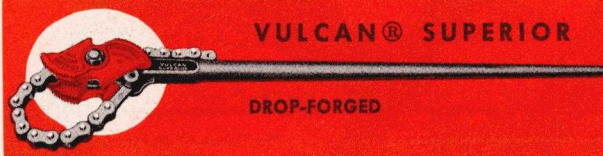
Number	Capacity	Length	Weight, Ea., Lbs.
CW-4	3/8 to 4" O.D.	11	1.4
*CW-420	3/8 to 4" O.D.	20	2.3

*Black oxide finish

PIPE and FITTINGS TONGS

VULCAN® SUPERIOR

DROP-FORGED



"V" Recess in the jaws increases grip on pipe or fittings. When the teeth first in use wear, simply unscrew through bolt and turn reversible jaws end-for-end. Heat-Treated Flat Link Chains are percentage "proof-tested" to two-thirds of their breaking strain, to Military Standards. Jaws are orange baked enamel. If single jaw is ordered specify right or left. Refer to Price List for replacement chains and parts.

Example of Order Nomenclature: "CT-5 TONG"

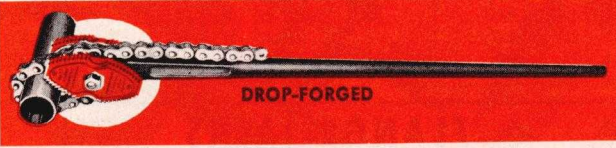
*MILITARY DESCRIPTION: GGG-W-00651D-1, TYPE III, CLASS B

No. with Flat Chain	CT-0	CT-1	CT-2	*CT-3	*CT-3½	*CT-4	*CT-5
Cap., Pipe and Fittings	½-¾	½-1½	¾-2½	¾-4	1-6	1½-8	2-12
Extreme Length	13¾	20	27	37	44½	50½	64½
Weight each, Lbs.	2.	5.5	10.	17.	26.	34.	54.
Chain Length	9½	13½	17½	22½	32	40½	55½
Breaking Strain, Lbs.	5,070	9,400	13,800	17,600	20,100	22,000	31,000

No. with Cable Chain	CT-2-2	CT-3-2	CT-3½-2	CT-4-2	CT-5-2
Chain Length	18	27	33½	42	57
Breaking Strain, Lbs.	9,000	12,500	14,300	15,700	21,800

WILLIAMS VULCAN® REVERSIBLE
CHAIN PIPE TONGS

DROP-FORGED



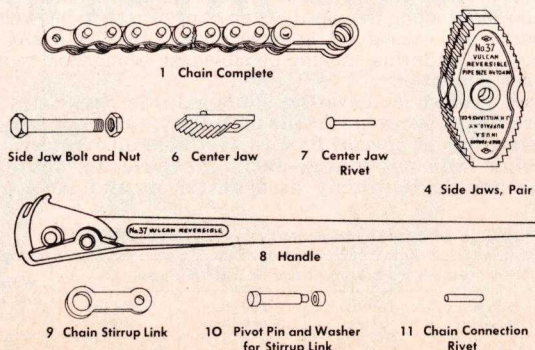
Without removing the tongs or loosening the chain Vulcan® Reversible Tongs will turn pipe instantly in either direction. Outer jaws can be removed to make an efficient fittings tongs for narrow heads and Flanges. Jaw removal is accomplished by taking out the single through bolt and self-locking nut used in assembly. These outer jaws are reversible end for end. Jaws are orange baked enamel. Heat-treated Flat Link Chains are percentage "proof-tested" to two-thirds of their breaking strain, to Military Standards.

Example of Order Nomenclature: "CT-37 TONG"

*MILITARY DESCRIPTION: GGG-W-00651D-1, TYPE III, CLASS B

Number	CT-27	*CT-37	*CT-47	*CT-57
For Pipe and Fittings, In.	1/4 to 2-1/2	3/4 to 4	1 to 6	1-1/2 to 8
Extreme Length	27	37	44-1/2	50-1/2
Weight each, Lbs.	12.3	19.7	29.3	43.
Flat Link Chain Length	17-1/2	22-1/2	32	40-1/2
Breaking Strain, Lbs.	13,800	17,600	20,100	22,100

PARTS FOR NOS. CT-27, 37, 47 and 57 ONLY
Order parts by number as listed in Price List.



HEAT-TREATED PIPE TONG CHAINS

WILLIAMS VULCAN®

CT-10-1 THRU CT-16-1 SERIES



Fits Vulcan Superior CT-0 thru CT-5
Improved Vulcan CT-30 thru CT-35

Fits Vulcan CT-10 thru CT-16

CT-27-1 THRU CT-57-1 SERIES



Fits Reversible CT-27 thru CT-57

A 40% increase in strength extends chain life and tong performance. Flat links are made from selected steel, rivets and swing links from alloy steel. Chain is heat-treated after assembly. All chains are percentage proof-tested to two-thirds of breaking strain to Military Standards.

Example of Order Nomenclature: "CT-14-1 CHAIN"

Chain No.	Lgth.	Break- ing Strain Lbs.	Williams				Bill- ings	Armstrong		Gearench	
			Super- ior	Vul- can	Im- proved	Re- vers- ible		One Jaw	Two Jaw	Titan	Titan Re- vers- ible
CT-10-1	9½	5,070	CT-0	CT-10	CT-30	.....	..	10	30	10	..
CT-11-1	13½	9,400	CT-1	CT-11	CT-31	.....	..	11	31	11	..
CT-12-1	17½	13,800	CT-2	CT-12	CT-32	.....	..	12	32	12	..
CT-13-1	22½	17,600	CT-3	CT-13	CT-33	.....	..	13	33	13	..
CT-13½-1	32	20,000	CT-3½	CT-13½	CT-33½	.....	..	13½	33½	13½	..
CT-14-1	40½	22,000	CT-4	CT-14	CT-34	.....	..	14	34	14	..
CT-15-1	55½	31,000	CT-5	CT-15	CT-35	.....	..	15	35	15	..
CT-16-1	74½	56,000	.....	CT-16	.....	.....	..	16	....	16	..
CT-27-1	17½	13,800	.....	.....	.....	CT-27	27	27	....	....	27
CT-37-1	22½	17,600	.....	.....	.....	CT-37	37	37	....	....	37
CT-47-1	32	20,100	.....	.....	.....	CT-47	47	47	....	....	47
CT-57-1	40½	22,000	.....	.....	.....	CT-57	57	57	....	....	57

FLANGE-JACKS



FOR FAST
EASY
GASKET
REPLACEMENT

SOLD
IN
PAIRS
ONLY



Operating with a minimum of effort, FLANGE-JACKS exert tremendous pressure smoothly and evenly. The flanges are parted quickly and held in perfect alignment without damage to flange faces.

There is no shock along the pipe line, no danger from flying wedges and no sparks are caused by hammer blows. FLANGE-JACKS eliminate costly shutdowns, making possible fast, economical repairs in hard-to-get-at locations.

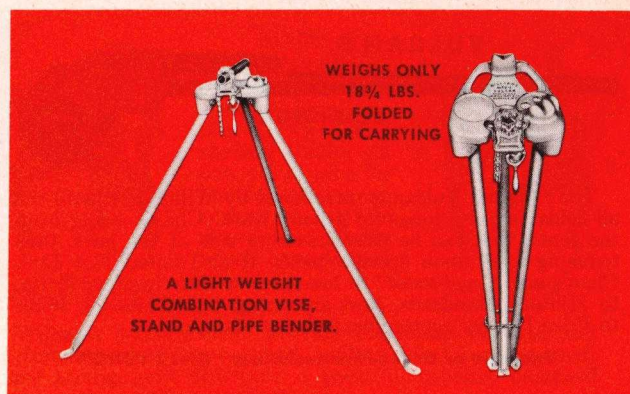
Technical data sheet covering Flange-Jacks capacities for all standard flange faces in various pipe classes and the dimensional limitations of special flanges available on request.

Table below indicates Flange-Jacks capacities for standard raised face flanges in widely used cast iron and steel pipe classes.

Example of Order Nomenclature: "FJ-20 JACKS"

No.	Capacity—Standard Raised Face Flanges				Weight Per Pair Lbs.
	125 lb. Cast Iron	150 lb. Steel	250 lb. Cast Iron	300 lb. Steel	
FJ-20	2" to 20"	2" to 20"	1" to 12"	3/4" to 12"	13.
FJ-30	16" to 48"	18" to 24"	12" to 30"	12" to 24"	45.

ALUMINUM VISE STAND No. CVS-1



WEIGHS ONLY
18½ LBS.
FOLDED
FOR CARRYING

A LIGHT WEIGHT
COMBINATION VISE,
STAND AND PIPE BENDER.

Base is made from special aluminum alloy which has high tensile and high impact properties. Its heavily reinforced design prevents distortion under severe service. Recess for oil can, handy slots for tools and V-pipe support are provided.

Pipe Benders are provided in two sizes. One handles pipe up to 1/2 inch, the other handles pipe up to 3/4 inch.

Legs are 1-1/2" special aluminum alloy tubing. Upset feet are punched for fastening to floor, if desired. Legs may be folded and tied together with attached chain for easy carrying.

Vise is Vulcan® No. CV-1 described on this page. Entire assembly has satin aluminum finish.

Example of Order Nomenclature: "CVS-1 VISE STAND"

Vise Stand No.	For Pipe Sizes	Wgt., Ea., Lbs.	No. CV-1 Vulcan® Vise Parts			
			Jaws in Pairs	Chain with Screw	Chain Screw Only	Handle with Nut
CVS-1	1/8 to *2-1/2"	18.8	4.	10.	18.	30.

WILLIAMS VULCAN®

DROP-FORGED CHAIN PIPE VISE

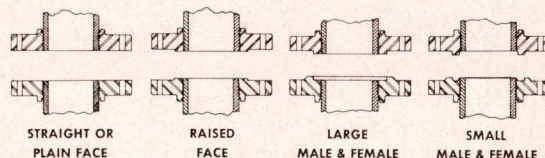


Adjustment is quickly effected by engaging the projecting rivets of the chain with a series of stepped bosses on the base. Drop-forged jaws are of saw-tempered steel for file-sharpening. The chains are of same quality as those of our Vulcan® Chain Pipe Tongs. Standard Finish—industrial gray with orange panel.

MILITARY DESCRIPTION:
GGG-V-415A-1, TYPE I, CLASS 1

No.	Pipe, Sizes	Wgt., Lbs.	Extra Parts			
			Jaws in Pairs	Chain with Screw	Chain Screw Only	Handle with Nut
CV-1	1/8 to *2-1/2"	4.	4.	10.	18.	30.
CV-2	1/4 to 4	10.	10.	18.	30.	30.
CV-3	1/4 to 6	18.	18.	30.	30.	30.
CV-4	1/4 to 8	30.	30.	30.	30.	30.

*Will grip fittings not larger in diam. than Std. 2-1/2" pipe (2-7/8" O.D.).

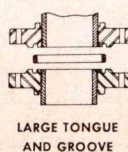
FLANGE-JACKS WILL SERVICE THESE
TYPES OF FLANGE JOINTS AND FACINGS

STRAIGHT OR
PLAIN FACE

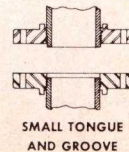
RAISED
FACE

LARGE
MALE & FEMALE

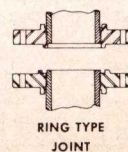
SMALL
MALE & FEMALE



LARGE TONGUE
AND GROOVE



SMALL TONGUE
AND GROOVE



RING TYPE
JOINT



The safest tools are top quality tools that combine quality in design, materials and manufacture. With Williams tools you get this combination of features every time. Make Williams your standard of safety in hand and machine shop tools.

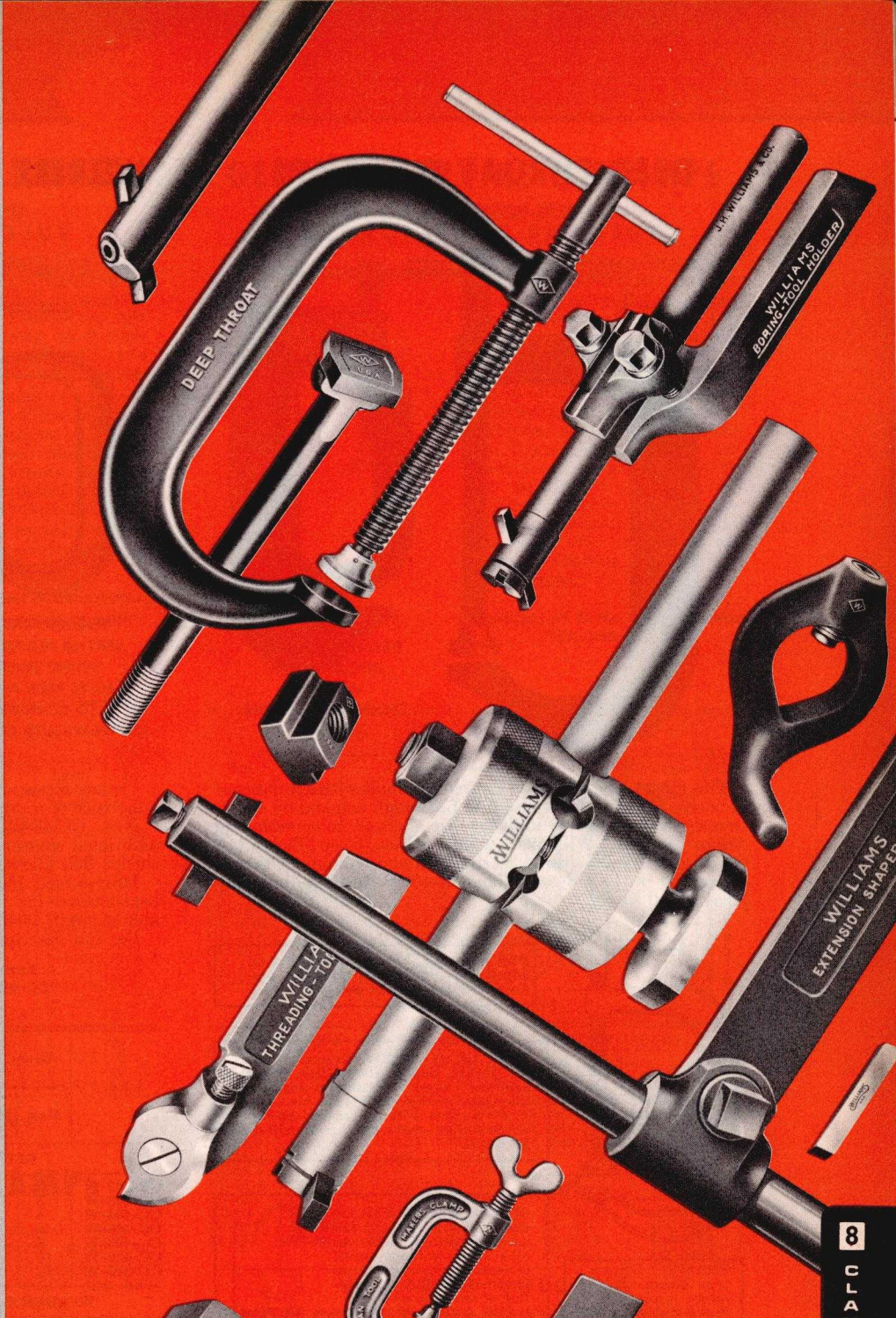


THIS IS
THE TEAM
THAT DELIVERS



TOOLPOWER

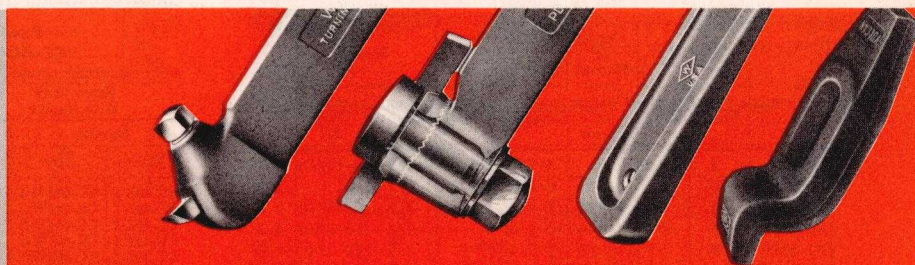
WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE



Section 8 CLAMPS and LATHE TOOLS

FOR TECHNICAL INFORMATION
ABOUT THESE PRODUCTS

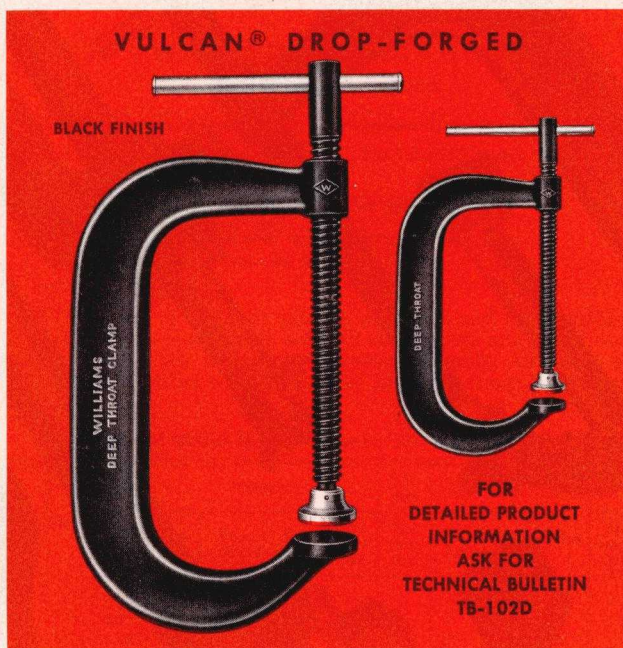
Ask for Technical Bulletin TB-102D which covers design features and competitive comparison of Williams C-Clamps. Also TB-114 on Tool Holders, TB-115 on Set-Up Tools and TB-116 on Carbide Tipped Single Point Bits.



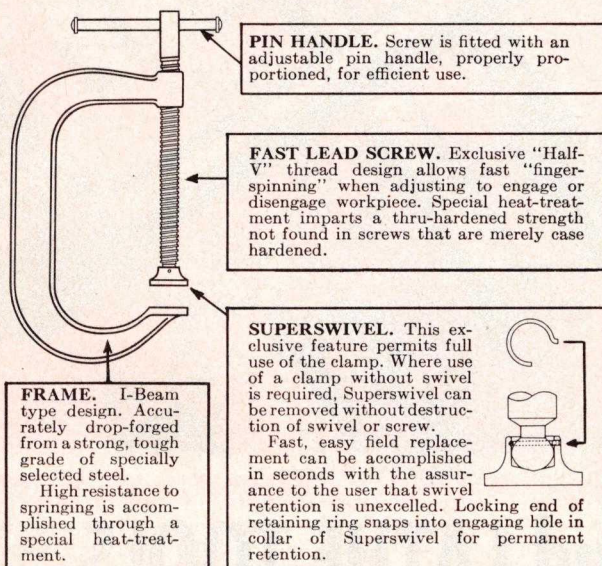
8
CLAMPS
AND
LATHE
TOOLS



DEEP THROAT C-CLAMPS



This most popular style of C-Clamp is built with a number of exclusive features that cause it to be in high demand by an extremely wide range of industry. In addition to outstanding design features, Williams CC-400 Series Deep Throat C-Clamps are manufactured by methods and equipment that is unexcelled in the industry. The CC-400 Series is individually boxed in all sizes.

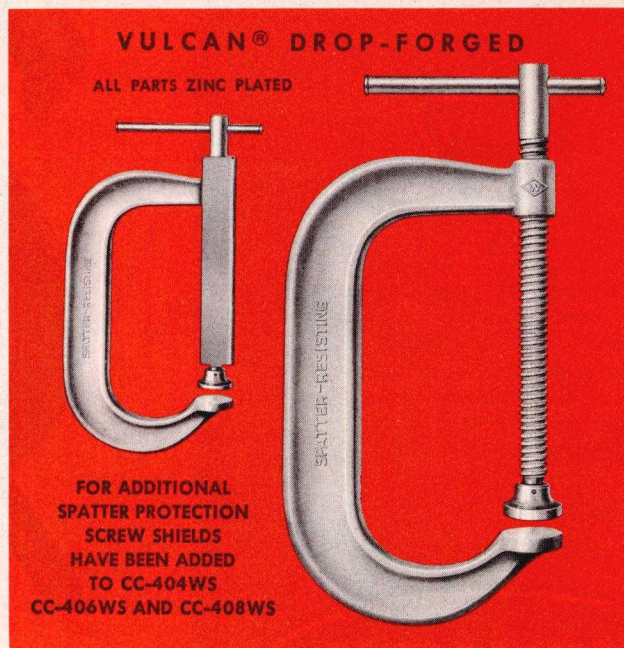


Example of Order Nomenclature: "CC-406 CLAMP"

MILITARY DESCRIPTION:
GGG-C-406C, TYPE 1, CLASS A, GRADE A, STYLE 1, 2

No.	Capacity		Depth of Throat from Center of Screw	Extreme Body Dimensions		Screw		Wgt. Ea., Lbs.
	Max.	Min.		Length	Width	Diam.	Length Over All	
CC-402	2	0	2	4-7/8	3-3/4	1/2	4-13/16	1.3
CC-403	3	0	2-3/8	6-1/8	4-1/8	1/2	6	1.7
CC-404	4	0	2-3/4	7-5/8	4-3/4	3/4	8-3/16	2.9
CC-406	6	0	3-5/8	10-1/4	6	3/4	10-5/16	4.5
CC-408	8	0	4-1/2	12-3/4	7	3/4	12-3/4	7.0
CC-410	10	2	5-3/8	15-1/4	8-1/8	3/4	12-3/4	9.2
CC-412	12	4	5-3/4	18	9	7/8	13-1/16	13.0

WELDERS' DEEP THROAT C-CLAMPS



FOR ADDITIONAL SPATTER PROTECTION SCREW SHIELDS HAVE BEEN ADDED TO CC-404WS, CC-406WS AND CC-408WS

Frame, screw, swivel and pin are zinc plated to resist the adherence of welding spatter.

Nos. CC-404WS, CC-406WS and CC-408WS have the additional spatter protection of permanently attached screw shields that allow full adjustment of the screws.

Drop-forged from an unusually strong special steel and heat-treated for maximum strength, they combine dependable strength with minimum weight.

For full description see features listed in opposite column.

Example of Order Nomenclature:
"CC-403W CLAMP, CC-406WS CLAMP"

MILITARY DESCRIPTION: GGG-C-406C, TYPE 1, CLASS A, GR. A, STYLE 1, 2

No.	Capacity		Depth of Throat from Center of Screw	Extreme Dimensions of Body		Screw		Wgt. Ea., Lbs.
	Max.	Min.		Length	Width	Diam.	Length Over All	
REGULAR WELDERS' C-CLAMPS								
CC-402-W	2	0	2	4-7/8	3-3/4	1/2	4-13/16	1.3
CC-403-W	3	0	2-3/8	6-1/8	4-1/8	1/2	6	1.7
CC-404-W	4	0	2-3/4	7-5/8	4-3/4	3/4	8-3/16	3.1
CC-406-W	6	0	3-5/8	10-1/4	6	3/4	10-5/16	4.8
CC-408-W	8	0	4-1/2	12-3/4	7	3/4	12-3/4	7.4
CC-410-W	10	2	5-3/8	15-1/4	8-1/8	3/4	12-3/4	9.2
CC-412-W	12	4	5-3/4	18	9	7/8	13-1/16	13.0

WELDERS' C-CLAMPS WITH SCREW SHIELDS

CC-404-WS	4	0	2-3/4	7-5/8	4-3/4	3/4	8-3/16	3.1
CC-406-WS	6	0	3-5/8	10-1/4	6	3/4	10-5/16	4.8
CC-408-WS	8	0	4-1/2	12-3/4	7	3/4	12-3/4	7.4

REPLACEMENT PARTS

Protect your C-Clamp investment by carrying a stock of replacement screws and swivels. You will be able to make immediate repairs to keep your C-Clamps in "safe-as-new" condition at all times, maintain efficiency, reduce accidents.

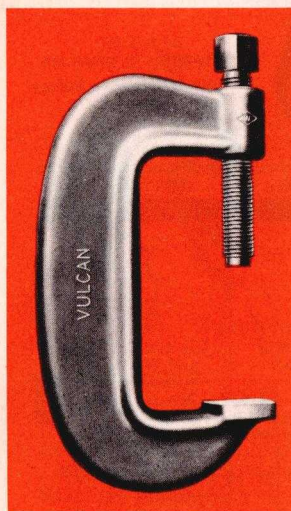
Example of Order Nomenclature:
"CC-404-1 SCREW, CC-406W-4 SWIVEL"

Screw Only With Handle			Superswivel Only With Ring			Screw Shield Only	
Number		Wgt.	Number		Wgt.	Number	Wgt.
Black	Zinc		Black	Zinc		Zinc	
CC-402-1	CC-402W-1	.27	CC-402-4	CC-402W-4	.06	CC-404W-5	.20
CC-403-1	CC-403W-1	.31	CC-403-4	CC-403W-4	.06	CC-406W-5	.30
CC-404-1	CC-404W-1	.39	CC-404-4	CC-404W-4	.19	CC-408W-5	.40
CC-406-1	CC-406W-1	1.2	CC-406-4	CC-406W-4	.19		
CC-408-1	CC-408W-1	1.5	CC-408-4	CC-408W-4	.19		
CC-410-1	CC-410W-1	1.5	CC-410-4	CC-410W-4	.19		
CC-412-1	CC-412W-1	2.0	CC-412-4	CC-412W-4	.25		



HEAVY SERVICE C-CLAMPS

VULCAN® DROP-FORGED



Williams Heavy Service C-Clamps are drop-forged from a strong, tough grade of carefully selected steel. Frames are specially heat-treated to further increase their strength and reduce the liability of springing.

Screws are made of a special grade of steel. A special heat-treatment imparts a thru-hardened strength and quality not found in screws that are merely case-hardened. Threads are standard Unified Coarse.

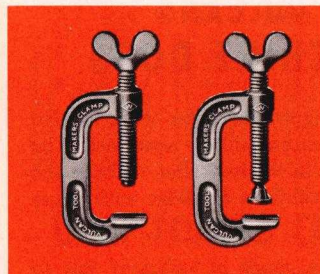
Where zero capacity is desired, clamps should be ordered with long screws.

Example of Order Nomenclature:
"CC-5 CLAMP, CC-3L CLAMP"

MILITARY DESCRIPTION:
GGG-C-406C, TYPE I, CLASS D

No.	Capacity		Depth of Throat Center of Screw	Extreme Dimensions of Body		Screw		Wgt. Ea., Lbs.
	Max.	Min.		Lgth.	Width	Diam.	Lgth. Under Head	
CC-0A	3/4	0	3/4	2-1/4	2	3/8	1- 1/2	.28
CC-1A	1-1/4	0	1-1/8	3-1/4	2-3/4	7/16	2- 1/4	.69
CC-1-1/2A	1-3/4	0	1-1/2	4-3/8	3-5/8	5/8	2- 7/8	1.7
CC-2A	2-1/4	3/4	1-3/4	5-1/2	4-1/2	3/4	3	3.3
CC-2LA	2-1/4	0	1-3/4	5-1/2	4-1/2	3/4	3- 3/4	3.4
CC-3A	3-1/4	9/16	2-3/8	7-1/4	5-3/4	7/8	4- 1/2	6.5
CC-3LA	3-1/4	0	2-3/8	7-1/4	5-3/4	7/8	5- 3/8	6.6
CC-4A	4-1/2	2	2-3/4	9	6-1/2	1	4- 1/2	10.2
CC-4LA	4-1/2	0	2-3/4	9	6-1/2	1	6- 3/4	10.6
CC-5A	5-1/2	1-7/8	3-1/8	10-1/2	7	1	5-15/16	12.4
CC-5LA	5-1/2	0	3-1/8	10-1/2	7	1	9- 1/16	12.9
CC-6	6-1/2	3	3-3/8	12	7-7/8	1	5-15/16	16.5
CC-6L	6-1/2	0	3-3/8	12	7-7/8	1	9- 1/16	17.1
CC-8	8-1/2	4	3-3/4	14-3/8	8-1/2	1-1/8	7	24.
CC-8L	8-1/2	0	3-3/4	14-3/8	8-1/2	1-1/8	11- 3/8	25.1
CC-10	10-1/2	6-1/4	4-1/8	16-7/8	9-1/8	1-1/8	7	28.
CC-10L	10-1/2	0	4-1/8	16-7/8	9-1/8	1-1/8	13- 1/2	29.5
CC-12	12-1/2	7-1/2	4-1/2	19-3/8	9-7/8	1-1/4	8	40.
CC-12L	12-1/2	0	4-1/2	19-3/8	9-7/8	1-1/4	15- 3/4	42.3

WILLIAMS VULCAN® DROP-FORGED TOOL-MAKERS C-CLAMPS



Drop-forged from a strong, tough grade of steel. Heat-treated after forging to reduce the liability of springing.

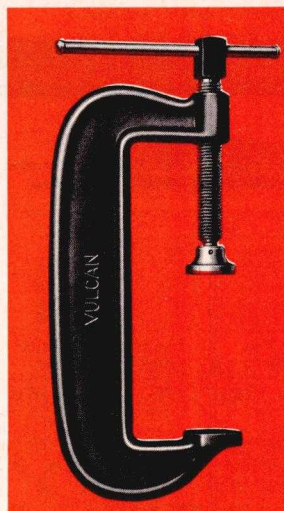
The Screws, drop-forged from a special grade of steel, hardened and tempered, are supplied in Swivel or Plain styles.

Example of Order Nomenclature:
"CC-203 CLAMP"

No.	Capacity		Depth of Throat	Extreme Dimensions		Screw		Wgt. Ea., Lbs.
	Max.	Min.		Lgth.	Width	Diam.	Lgth.	
WITH SWIVEL SCREW								
CC-201	3/4	0	11/16	2-1/8	1-1/2	5/16	1-11/16	.25
CC-202	1-3/4	5/16	13/16	3-3/8	1-7/8	3/8	2- 7/16	.33
CC-203	2-3/4	11/16	15/16	4-1/2	2-1/8	3/8	3- 3/16	.56
CC-204	4	1-3/16	1- 1/8	6-3/8	2-1/2	7/16	4- 1/8	.90

GENERAL SERVICE C-CLAMPS

VULCAN® DROP-FORGED



Frames are drop-forged and specially heat-treated in electronically controlled furnaces for increased strength and toughness. Finish, black nickel penetrate.

Screws are made of a special grade of steel. A special heat-treatment imparts a thru-hardened strength and quality not found in screws that are merely case-hardened. Threads are standard Unified Coarse. Williams exclusive Super-swivels, as described on opposite page, offer unexcelled retention. Clamps are individually boxed.

Example of Order Nomenclature:
"CC-108 CLAMP"

MILITARY DESCRIPTION:
GGG-C-406C, TYPE I, CLASS B, GRADE A, STYLE 1

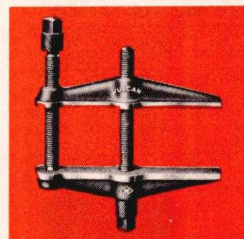
No.	Capacity		Depth of Throat from Center of Screw	Extreme Dimensions of Body		Screw		Wgt. Ea., Lbs.
	Max.	Min.		Lgth.	Width	Diam.	Overall Length Including Swivel	
CC-102	2	0	1-1/2	4-7/8	3-1/2	1/2	4-13/16	1.5
CC-103	3	0	2	6-7/8	4-3/8	5/8	6- 5/8	2.8
CC-104	4	0	2-3/8	8-1/4	5-1/8	3/4	8- 1/8	4.5
CC-106	6	2	2-1/2	10-3/8	5-3/8	3/4	8- 1/8	5.8
CC-106L	6	0	2-1/2	10-3/8	5-3/8	3/4	10- 1/8	6.0
CC-108	8	4	2-5/8	12-5/8	5-3/4	3/4	8- 1/8	7.3
CC-108L	8	0	2-5/8	12-5/8	5-3/4	3/4	12- 1/8	7.7
CC-110	10	6	2-3/4	14-7/8	5-7/8	3/4	8- 1/8	7.9
CC-112	12	8	2-7/8	16-7/8	6	3/4	8- 1/8	9.9
CC-115	15	10	3-1/16	20-1/4	6-1/2	7/8	9-11/16	14.1
CC-118	18	13	3-1/4	23-3/4	7	7/8	9-11/16	17.8

REPLACEMENT PARTS

HEAVY SERVICE		GENERAL SERVICE		TOOLMAKERS		
Standard Screws	Long Screws	Screw and Handle	Swivel and Ring	Plain Screw	Swivel Screw	Swivel
CC-0A-1	.....	CC-102-1	CC-102-4	CC-201P-1	CC-201-1	CC-201-2
CC-1A-1	.....	CC-103-1	CC-103-4	CC-202P-1	CC-202-1	CC-202-2
CC-1-1/2A-1	.....	CC-104-1	CC-104-4	CC-203P-1	CC-203-1	CC-203-2
CC-2A-1	CC-2LA-1	CC-106-1	CC-106-4	CC-204P-1	CC-204-1	CC-204-2
CC-3A-1	CC-3LA-1	CC-106L-1	CC-106-4	MACHINISTS'		
CC-4A-1	CC-4LA-1	CC-108-1	CC-108-4	Center Screw		
CC-5A-1	CC-5LA-1	CC-108L-1	CC-108-4	End Screw		
CC-6-1	CC-6L-1	CC-110-1	CC-110-4	CC-301-1	CC-301-2	
CC-8-1	CC-8L-1	CC-112-1	CC-112-4	CC-302-1	CC-302-2	
CC-10-1	CC-10L-1	CC-115-1	CC-115-4	CC-303-1	CC-303-2	
CC-12-1	CC-12L-1	CC-118-1	CC-118-4	CC-304-1	CC-304-2	

WILLIAMS VULCAN®

DROP-FORGED MACHINISTS' CLAMPS



Drop-forged from a strong, tough grade of steel and heat-treated to further increase strength and to reduce the liability of springing.

The knurled portion of the hardened and tempered Screws permits rapid and easy adjustment.

Edges of jaws are ground bright. When ordering extra Screws specify whether for end or center.

Example of Order Nomenclature: "CC-302 CLAMP"

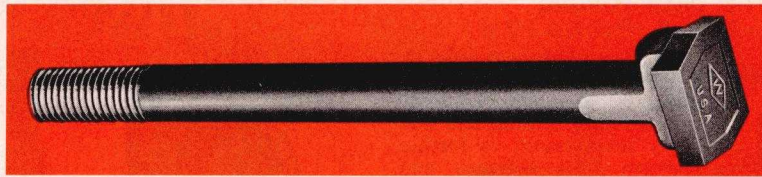
MILITARY DESCRIPTION: GGG-C-406C, TYPE II, CLASS A

No.	Capacity		Screws				Wgt. Ea., Lbs.
	Maximum Opening	Length Jaw from Screw	End		Center		
			Diam.	Lgth.	Diam.	Lgth.	
CC-301	1-1/4	1-3/4	5/16	2-1/8	5/16	2- 5/8	.6
CC-302	2-1/4	2-1/4	3/8	3-1/4	3/8	3-15/16	1.4
CC-303	3-1/4	2-3/4	7/16	4-5/8	7/16	5- 1/4	1.9
CC-304	4-1/4	3-1/4	1/2	5-3/4	1/2	6- 1/2	3.1



T-SLOT BOLTS

For setting up work on planers, shapers, milling machines. Threaded Unified Coarse. Will not turn in table or break out table slots.



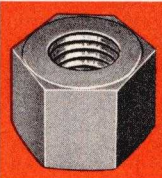
Lengths in table are under head in inches

3/8" T-Slot Size			1/2" T-Slot Size			5/8" T-Slot Size			3/4" T-Slot Size			7/8" T-Slot Size 3/4" Shank			1" T-Slot Size 7/8" Shank		
Use HN-3 Hex Nut and W-3 Washer			Use HN-4 Hex Nut and W-4 Washer			Use HN-5 Hex Nut and W-5 Washer			Use HN-6 Hex Nut and W-6 Washer			Use HN-6 Hex Nut and W-6 Washer			Use HN-7 Hex Nut and W-7 Washer		
No.	Lgth.	Wgt.	No.	Lgth.	Wgt.	No.	Lgth.	Wgt.	No.	Lgth.	Wgt.	No.	Lgth.	Wgt.	No.	Lgth.	Wgt.
TS3-1	1	.05															
TS3-1-1/4	1-1/4	.05	TS4-1-1/4	1-1/4	.14												
TS3-1-1/2	1-1/2	.06	TS4-1-1/2	1-1/2	.16	TS5-1-1/2	1-1/2	.27									
TS3-1-3/4	1-3/4	.07	TS4-1-3/4	1-3/4	.17				TS6-2	2	.49						
TS3-2	2	.08	TS4-2	2	.18	TS5-2	2	.29									
TS3-2-1/4	2-1/4	.08	TS4-2-1/4	2-1/4	.20	TS5-2-1/4	2-1/4	.32	TS6-2-1/2	2-1/2	.55	TS7-2-1/2	2-1/2	.74			
TS3-2-1/2	2-1/2	.09	TS4-2-1/2	2-1/2	.21	TS5-2-1/2	2-1/2	.33									
			TS4-2-3/4	2-3/4	.22	TS5-2-3/4	2-3/4	.36									
TS3-3	3	.11	TS4-3	3	.24	TS5-3	3	.37	TS6-3	3	.60	TS7-3	3	.83	TS8-3	3	1.1
TS3-3-1/2	3-1/2	.12	TS4-3-1/2	3-1/2	.26	TS5-3-1/2	3-1/2	.42	TS6-3-1/2	3-1/2	.67	TS7-3-1/2	3-1/2	.88			
TS3-4	4	.14	TS4-4	4	.29	TS5-4	4	.47	TS6-4	4	.73	TS7-4	4	.96	TS8-4	4	1.2
TS3-4-1/2	4-1/2	.15	TS4-4-1/2	4-1/2	.31	TS5-4-1/2	4-1/2	.52	TS6-4-1/2	4-1/2	.79	TS7-4-1/2	4-1/2	1.			
TS3-5	5	.16	TS4-5	5	.35	TS5-5	5	.56	TS6-5	5	.84	TS7-5	5	1.	TS8-5	5	1.4
TS3-5-1/2	5-1/2	.18	TS4-5-1/2	5-1/2	.38	TS5-5-1/2	5-1/2	.60	TS6-5-1/2	5-1/2	.91	TS7-5-1/2	5-1/2	1.1			
TS3-6	6	.19	TS4-6	6	.40	TS5-6	6	.64	TS6-6	6	.96	TS7-6	6	1.2	TS8-6	6	1.6
			TS4-7	7	.44	TS5-7	7	.71	TS6-7	7	1.1	TS7-7	7	1.3	TS8-7	7	1.8
TS3-8	8	.26	TS4-8	8	.49	TS5-8	8	.75	TS6-8	8	1.2	TS7-8	8	1.4	TS8-8	8	1.9
			TS4-9	9	.55	TS5-9	9	.87	TS6-9	9	1.3	TS7-9	9	1.5	TS8-9	9	2.2
			TS4-10	10	.61	TS5-10	10	.96	TS6-10	10	1.4	TS7-10	10	1.7	TS8-10	10	2.4
			TS4-12	12	.71	TS5-12	12	1.1	TS6-12	12	1.7	TS7-12	12	2.	TS8-12	12	2.6
						TS5-14	14	1.3	TS6-14	14	1.9	TS7-14	14	2.1	TS8-14	14	2.9
						TS5-16	16	1.5	TS6-16	16	2.2	TS7-16	16	2.4	TS8-16	16	3.3
						TS5-18	18	1.7	TS6-18	18	2.4	TS7-18	18	2.6	TS8-18	18	3.6

HEXAGON NUTS

For use with Williams T-Slot Bolts. Threaded Unified Coarse and case hardened.

No.	Bolt Dia., In.	Threads Per In.	Thickness, In.	Across Flats, In.	Wgt. Each
HN-3	3/8	16	7/16	11/16	.04
HN-4	1/2	13	5/8	7/8	.09
HN-5	5/8	11	3/4	1-1/16	.14
HN-6	3/4	10	7/8	1-1/4	.24
HN-7	7/8	9	1	1-7/16	.34



SET-UP WEDGES

For use on planers, shapers, milling machines, etc.

No.	Length	Width	Thick End	Weight Ea., Lbs.
WG-3	3	1	1/4	.13
WG-5	5	1	1/2	.31
WG-6	6	1-1/4	3/4	.63



WILLIAMS VULCAN®

MILLING MACHINE DOGS



These are designed for taper work carried between centers on milling machines. The flat tail works in the head-slot without the back-lash unavoidable in Dogs with taper tail.

The heads are made of sufficient size to permit re-tapping for one or two larger sizes of screws as the threads wear. Screws are hardened and tempered.

Example of Order Nomenclature: "LD-44 DOG"

No.	Capacity	Screw		Wgt. Ea., Lbs.	Extra Screw No.
		Diameter	Length Under Head		
LD-42	1/2	3/8	1-1/4	.75	LD-42-3
LD-43	3/4	7/16	1-5/8	.93	LD-43-3
LD-44	1	1/2	2	1.2	LD-44-3
LD-45	1-1/4	1/2	2	1.3	LD-45-3
LD-46A	1-1/2	5/8	2-1/2	1.6	LD-46A-3
LD-47	1-3/4	5/8	2-1/2	1.8	LD-47-3
LD-48	2	5/8	2-7/8	2.1	LD-48-3

FLAT WASHERS

FOR T-SLOT BOLTS

Extra thick to resist bending with beveled edges on one side.



No.	Bolt Dia. Inches	Outside Dia. Inches	Thickness, Inches	Wgt. Each
W-3	3/8	7/8	1/8	.02
W-4	1/2	1	3/16	.03
W-5	5/8	1-1/4	1/4	.06
W-6	3/4	1-1/2	1/4	.06
W-7	7/8	1-3/4	1/4	.15

T-SLOT NUTS

For setting-up work on planers, shapers, milling machines, etc., where studs are to be used in place of T-Slot Bolts. Threaded Unified Coarse.



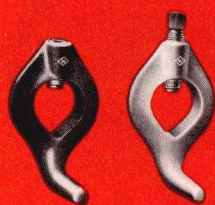
No.	T-Slot Size	Stud Diam.	Th'ds Per Inch					Wgt. Each
TN-5	5/8	1/2	13	1-1/8	13/32	1-1/4	3/4	.18
TN-6	3/4	5/8	11	1-5/16	17/32	1-1/2	7/8	.29
TN-7	7/8	3/4	10	1-1/2	9/16	1-3/4	1	.42
TN-8	1	7/8	9	1-3/4	5/8	2	1-1/8	.63
TN-10	1-1/4	1	8	2	7/8	2-3/8	1-11/32	1.1

DROP-FORGED LATHE DOGS

VULCAN®

REGULAR
SINGLE SCREW

HEAVY SERVICE — DOUBLE SCREW



Hollow Head Square Head Hollow Head Square Head



Hex Wrenches are supplied for Nos. LD-1A-1 thru LD-8A-1
Square Wrenches are supplied for Nos. LD-9-1 thru LD-13-1
Square Wrenches are supplied for Nos. LD-112-1 thru LD-114-1

The Screws are of special steel, hardened and tempered.
They are supplied in two types, Hollow and Square Head,
which are interchangeable in corresponding Dogs.

Example of Order Nomenclature: "LD-5A DOG"

Cap.	With Square Head Screw			With Hollow Head Screw			Wgt. Ea., Lbs.
	No.	Screw Diam.	Length Under Head	No. With Wrench	Screw Diam.	Overall Length	

REGULAR — SINGLE SCREW

MILITARY DESCRIPTION: 00-D-565A, TYPE I, CLASS B, STYLE 1

3/8	LD-1A	5/16	1	LD-1A-1	5/16	5/8	.32
1/2	LD-2A	3/8	1-1/4	LD-2A-1	3/8	3/4	.56
3/4	LD-3A	7/16	1-5/8	LD-3A-1	7/16	7/8	1.
1	LD-4A	1/2	2	LD-4A-1	1/2	1	1.5
1-1/4	LD-5A	5/8	2	LD-5A-1	5/8	1-1/4	1.9
1-1/2	LD-6A	5/8	2-1/2	LD-6A-1	5/8	1-3/4	2.6
1-3/4	LD-7A	5/8	2-1/2	LD-7A-1	5/8	1-3/4	3.3
2	LD-8A	5/8	2-7/8	LD-8A-1	5/8	1-3/4	4.1
2-1/2	LD-9	1-1/8	3	LD-9-1	1-1/8	2	5.4
3	LD-10	1-1/4	3-1/4	LD-10-1	1-1/4	2-1/8	7.
3-1/2	LD-11	1-3/8	3-1/2	LD-11-1	1-3/8	2-1/2	10.
4	LD-12	1-1/2	3-3/4	LD-12-1	1-1/2	2-5/8	12.
5	LD-13	1-5/8	4-1/2	LD-13-1	1-5/8	3-3/8	20.

HEAVY SERVICE — DOUBLE SCREW

MILITARY DESCRIPTION: 00-D-565A, TYPE I, CLASS B, STYLE 2

4	LD-112	1-1/2	3-3/4	LD-112-1	1-1/2	2-5/8	15.
5	LD-113	1-5/8	4-1/2	LD-113-1	1-5/8	3-3/8	21.5
6	LD-114	1-5/8	4-1/2	LD-114-1	1-5/8	3-3/8	30.7

REPLACEMENT PARTS

Screw Diam.	No. Square Head Screw	No. Hollow Head Screw	No. Hollow Screw Wrench	Screw Diam.	No. Square Head Screw	No. Hollow Head Screw	No. Hollow Screw Wrench
5/16	LD-1A-3	LD-1A-4	LD-1A-5	1-1/8	LD-9-3	LD-9-4	LD-9-5
3/8	LD-2A-3	LD-2A-4	LD-2A-5	1-1/4	LD-10-3	LD-10-4	LD-10-5
7/16	LD-3A-3	LD-3A-4	LD-3A-5	1-3/8	LD-11-3	LD-11-4	LD-11-5
1/2	LD-4A-3	LD-4A-4	LD-4A-5	1-1/2	LD-12-3	LD-12-4	LD-12-5
5/8	LD-5A-3	LD-5A-4	LD-5A-5	1-5/8	LD-13-3	LD-13-4	LD-13-5
5/8	LD-6A-3	LD-6A-4	LD-6A-5	1-1/2	LD-112-3	LD-112-4	LD-112-5
5/8	LD-7A-3	LD-7A-4	LD-7A-5	1-5/8	LD-113-3	LD-113-4	LD-113-5
5/8	LD-8A-3	LD-8A-4	LD-8A-5	1-5/8	LD-114-3	LD-114-4	LD-114-5

WILLIAMS VULCAN®

DROP-FORGED CLAMP LATHE DOGS



The Screws are made of a special grade
of steel and are hardened and tempered.
The nuts are case hardened. Extra Screws
and Nuts carried in stock.

The Nuts furnish ready means of arrange-
ment for the minimum projection of Screws
beyond the body of Dog and thus lessen the
danger to the operator when tool is in use.

MILITARY DESCRIPTION: 00-D-565A, TYPE II, CLASS B

No.	Capacity		Screws		Wgt. Ea., Lbs.	Replacement Parts	
	Max. Opening	Distance Between Screws	Diam.	Length Under Head		No. Screw Only	No. Nut Only
LD-61	1-5/8	1-3/4	5/16	2-3/4	.53	LD-61-3	LD-61-6
LD-62	1-7/8	2-1/4	3/8	3-5/16	.98	LD-62-3	LD-62-6
LD-63	2-1/2	2-3/4	7/16	4-1/4	1.8	LD-63-3	LD-63-6
LD-64	3-1/4	3-1/2	1/2	5-3/8	3.	LD-64-3	LD-64-6

DROP-FORGED STRAP CLAMPS

VULCAN®

Williams Strap Clamps are heat-treated after forging to
increase their strength and stiffness.

On Planer, Lathe, Drill Press, Milling and Boring Machine
work they are time-saving and effective.

PLAIN SLOT
PATTERN

No.	Lgth.	Width		Thickness		Slot; Nom. Dim.		Wgt. Ea.
		Ends	Center	Ends	Center	Length	Width	
SC-54	4	1-3/16	1-5/8	1/2	3/4	1-3/8	11/16	1.
SC-56	6	1-1/4	1-3/4	9/16	7/8	2-1/16	11/16	1.8
SC-58	8	1-1/2	2-1/8	3/4	1-1/8	2-13/16	13/16	3.8
SC-59	10	1-3/4	2-1/2	15/16	1-3/8	3-11/16	15/16	6.6

ADJUSTABLE STEP
PATTERN

No.	Lgth.	Width		Thickness		Slot; Nom. Dimensions		Screws		Wgt. Ea.	Extra Screw No.
		Ends	Center	Ends	Center	Lgth.	Width	Dia.	Lgth. Under Head		
SC-54A	4	1-3/16	1-5/8	1/2	3/4	1-3/8	11/16	1/2	1-1/4	1.	SC-54A-1
SC-56A	6	1-1/4	1-3/4	9/16	7/8	2-1/16	11/16	5/8	1-1/2	2.	SC-56A-1
SC-58A	8	1-1/2	2-1/8	3/4	1-1/8	2-13/16	13/16	3/4	1-3/4	3.9	SC-58A-1
SC-59A	10	1-3/4	2-1/2	15/16	1-3/8	3-11/16	15/16	7/8	2-1/8	7.1	SC-59A-1

GOOSE NECK
PATTERN

No.	Lgth.	Width		Thickness		Slot; Nom. Dimensions		Neck Offset	Wgt. Ea.
		Ends	Center	Ends	Center	Length	Width		
SC-74	4	1-3/16	1-5/8	3/8 & 1/2	3/4	15/16	11/16	13/16	1.
SC-76	6	1-1/4	1-3/4	7/16 & 9/16	7/8	1-11/16	11/16	15/16	2.
SC-78	8	1-1/2	2-1/8	9/16 & 3/4	1-1/8	2-7/16	13/16	1-1/8	4.2

FINGER PATTERN
SINGLE END

No.	Lgth.	Width		Thickness		Slot; Nom. Dimensions		Finger Dimen- sions	Wgt. Ea.
		Flat End	Center	Flat End	Center	Length	Width		
SC-44	4	1-3/16	1-5/8	7/16	3/4	1-3/8	11/16	1/2 x 1/2	.83
SC-46	6	1-1/4	1-3/4	1/2	7/8	1-15/16	11/16	5/8 x 5/8	1.6
SC-48	8	1-1/2	2-1/8	5/8	1-1/8	2-9/16	13/16	3/4 x 3/4	3.3

FINGER PATTERN
DOUBLE END

No.	Length	Width Center	Thickness Center	Nom. Diameter Hole	Finger Dimensions	Wgt. Each
SC-30	3	1-1/2	5/8	11/16	1/2 x 1/2	.37
SC-35	3-1/2	1-5/8	3/4	11/16	5/8 x 5/8	.62
SC-40	4	1-13/16	7/8	13/16	3/4 x 3/4	.87

"U" PATTERN



No.	Length	Width	Thick- ness	Slot; Nom. Dimensions		Finger Dimensions	Wgt. Each
				Length	Width		
SC-64	4-1/2	1-3/4	3/4	3-1/2	11/16	1/2 x 1/2	1.
SC-66	6-5/8	2	7/8	5-1/2	11/16	5/8 x 5/8	2.
SC-68	8-3/4	2-1/2	1-1/8	7-3/8	13/16	3/4 x 3/4	4.
SC-110	10	2-3/4	1-1/4	9	15/16	15/16 x 15/16	5.8
SC-112	12	3-1/4	1-3/4	11	1-1/16	1-1/16 x 1-1/16	12.5

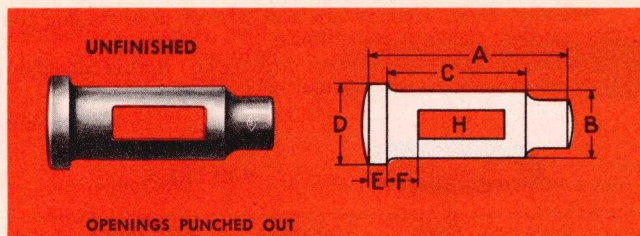
UNIVERSAL
ADJUSTABLE

Designed for holding work in planers,
boring mills, drill presses, milling ma-
chines, etc. Ideal for irregular shapes and
varying sizes. Position of the saddle may
be changed to maintain vertical, right
angle positioning of the tie-bolt.

No.	Length	Width of Clamp	Adjust- ment	Max. "T" Slot Bolt. Size Inches	Wgt. Each	Extra Saddles	
						No.	Wgt. Each
SC-21	5-1/16	1-5/8	2-1/4	5/8	1.3	SC-21S	.19
SC-22	8	2-1/8	4	3/4	3.1	SC-22S	.31
SC-23	12	2-3/4	6-1/4	1	9.8	SC-23S	.75

DROP-FORGED TOOL POSTS

VULCAN®



Head is neither drilled nor tapped.

No.	Over-all Lgth A	Body		Base		Base to Oppg F	Opening Size H	For Use With		Wgt. Ea., Lbs.
		Diam B	Lgth C	Diam D	Thick E			Wedge	Ring	
TP-5	2 1/16	1 1/16	2	1 1/16	3/16	3/16	1 1/16 x 3/16	TPW-5	TPR-5	.5
TP-10	4 1/16	1 1/4	2 7/8	1 5/8	3/4	1/2	1 1/16 x 1 1/16	TPW-10	TPR-10	1.1
TP-20	4 9/16	1 5/8	3 1/4	2 1/8	3/4	1/2	1 1/8 x 1 1/8	15 & 18	TPR-11	2.2
TP-23	5	1 7/8	3 1/2	1 7/8	3/4	1/2	2 1/2 x 2 1/2	TPW-15	TPR-14	1.6
TP-28	5 5/16	1 3/4	3 11/16	2 1/8	3/4	1/2	2 1/16 x 1 1/16	15 & 18	TPR-18	2.2
TP-30	5 1/4	1 13/16	3 3/4	2 5/8	3/4	1/2	2 1/8 x 3/4	18 & 20	TPR-20	3.1
TP-40	6 5/16	2 1/8	4 3/8	2 3/4	3/4	1/2	2 1/2 x 3/4	30 & 40	TPR-40	4.7
TP-50	7 3/8	2 3/4	5	2 13/16	3/4	1/2	2 3/8 x 1 1/8	TPW-60	TPR-60	6.6
TP-60	8 3/4	2 3/4	6	3 3/8	3/4	1 1/2	3 3/8 x 1	.....	.....	14.2

WILLIAMS VULCAN®

DROP-FORGED TOOL POST RINGS



No.	Outside Diam.	Hole Diam.	Edge Thick.	Radius of Concave	For Use With		Wgt. Ea., Lbs.
					Post	Wedge	
TPR-5	2-1/4	1-1/16	3/8	3	TP-5	TPW-5	.30
TPR-10	2-15/16	1-5/16	7/16	2-7/8	TP-10	TPW-10	.65
TPR-11	3	1-5/8	7/16	4-5/8	TP-20	TPW-11 & 15	.56
TPR-14	3-3/16	1-7/16	5/8	4-5/8	TP-23	TPW-18 & 20	.94
TPR-18	3-7/16	1-9/16	11/16	4-1/2	TP-28	TPW-18	1.3
TPR-20	3-1/2	1-3/4	9/16	4-3/4	TP-30	TPW-18 & 20	.94
TPR-30	3-1/2	2	3/4	5-1/2	TP-40	TPW-30	1.3
TPR-40	4	2	3/4	5-3/4	TP-40	TPW-40	1.9
TPR-60	4-1/2	2-3/16	3/4	6	TP-50	TPW-60	2.3

WILLIAMS VULCAN®

DROP-FORGED TOOL POST WEDGES



No.	Length	Width Top	Width Extreme	Extreme Thick.	Radius	For Use With		Wgt. Ea., Lbs.
						Post	Ring	
TPW-5	2-13/32	13/32	1/2	11/32	3	TP-5	TPR-5	.08
TPW-10	3	9/16	21/32	31/64	2-7/8	TP-10	TPR-10	.19
TPW-11	3-3/8	1/2	19/32	25/64	4-5/8	TP-20	TPR-11	.13
TPW-15	3-3/8	5/8	23/32	7/16	4-5/8	TP-20	TPR-11	.19
TPW-18	3-7/8	11/16	3/4	15/32	4-1/2	TP-30	TPR-11 & 20	.25
TPW-20	3-7/8	11/16	13/16	17/32	4-3/4	TP-30	TPR-20	.30
TPW-30	4-3/8	3/4	7/8	1/2	5-1/2	TP-40	TPR-30	.36
TPW-40	4-7/8	13/16	15/16	21/32	5-3/4	TP-40	TPR-40	.56
TPW-60	5-1/4	15/16	1-3/32	3/4	6	TP-50	TPR-60	.78
TPW-65	5-5/16	7/8	1-1/32	29/32	5	.....	.....	.91

TURNING TOOL HOLDERS



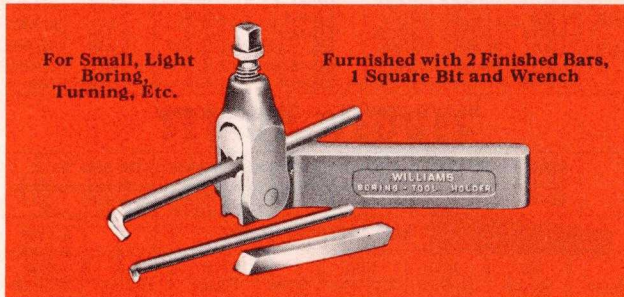
Furnished with Bit and Wrench

Holders have nose chamfered and are specially heat-treated and hardened. The cutter-holding channel provides a true and rigid seat for the cutter and assures a chatter-proof tool. High Speed Bits are furnished in a "diamond-point" form that requires a minimum of grinding.

Straight Shank	Offset Shank		Holder Size	Square Bit		For Lathes of Approx. Swing, Inches	Wgt. Ea., Lbs.
	Right Hand	Left Hand		Size	No.		
TH-000-S	TH-000-R	TH-000-L	5/16 x 1/2 x 4	3/16	2301	6 to 7	.31
TH-00-S	TH-00-R	TH-00-L	5/16 x 3/4 x 1-1/2	3/16	2301	7 to 10	.44
TH-0-S	TH-0-R	TH-0-L	3/8 x 7/8 x 5	1/4	2302	10 to 12	.67
TH-1-S	TH-1-R	TH-1-L	1/2 x 1-1/8 x 6	5/16	2303	14 to 16	1.3
TH-2-S	TH-2-R	TH-2-L	5/8 x 1-3/8 x 7	3/8	2304	16 to 18	2.1
TH-3-S	TH-3-R	TH-3-L	3/4 x 1-5/8 x 8	7/16	2305	18 to 20	3.3
TH-4-S	TH-4-R	TH-4-L	7/8 x 1-3/4 x 9	1/2	2306	24 to 36	4.8
TH-5-S	TH-5-R	TH-5-L	1 x 2 x 11	5/8	2307	.....	7.7
TH-6-S	TH-6-R	TH-6-L	1-1/4 x 2-1/4 x 13	3/4	2308	.....	12.2

WILLIAMS

LIGHT BORING TOOL HOLDERS



This Holder is very handy for all small work—not only in boring small diameters, threading, etc., but also in turning. Boring. Each tool will hold a number of sizes of Bars; two, varying 1/8" in diameter, are supplied with each Holder. The solid Bars are High Speed Steel, hardened and ground.

Turning. The Holder, with offset shank, is reversible for right and left hand work. The self-adjusting gib allows the yoke to clear the end of the Holder. A hardened, High Speed Steel Square Bit with ends beveled to a "diamond-point" for easy grinding to desired form, is supplied with each tool.

MILITARY DESCRIPTION: 00-H-581A, TYPE VI, CLASS 1, STYLE A

No.	Holder Size Shank	With Each Holder				For Lathes of Approx. Swing Inches	Wt. Ea., Lbs.
		Two Bars		One Bit			
		Diam.	No.	Sq.	No.		
TH-15	3/8x 3/4x5	1/8 1/4	8140 8142	1/4	2302	9 to 10	.88
TH-16	1/2x1 x5-3/4	3/16 5/16	8141 8143	5/16	2303	11 to 14	1.6
TH-17	5/8x1-1/4x6-3/4	1/4 3/8	8142 8144	3/8	2304	14 to 16	2.8
TH-18	3/4x1-1/2x7-1/2	5/16 7/16	8143 8145	7/16	2305	16	4.6

EXTRA BORING BARS

No.	8140	8141	8142	8143	8144	8145
Size For	1/8 x 4	3/16 x 4-1/2	1/4 x 5	5/16 x 6	3/8 x 7	7/16 x 8
For	TH-15 & 16	TH-15 to 17	TH-15 to 17	TH-15 to 18	TH-16 to 18	TH-17 & 18

See pages 108 and 109 for Bits for the above Tool Holders.



3-BAR BORING TOOL



Each Holder accommodates three sizes of Bars. Speedy changes can be made by a slight turn of one nut which releases or secures both Bar and Holder instantly. Speeds and feeds can be increased since this Holder allows the operator to use the strongest bar possible for each individual job.

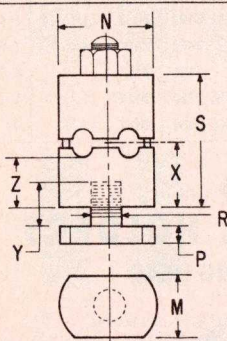
Each set includes zinc plated Holder; three Sleeve Bars each with one 45° and one 90° high speed bit and wrench; and one wrench for Holder nut.

MILITARY DESCRIPTION: 00-H-581A, TYPE VI, CLASS 2, STYLE B

Note: Bolt head and bottom part of holder are made of ample size to allow for fitting which is necessary on account of the great variation in height of centers above slide rest and difference in sizes of T-slots. For standard dimensions and special finishing to individual machines see information below.

* 3/8 x 7" Solid Bar No. 8144

No.	For Lathes Swing In.	Diameter Bars	Length of Bars	Size Bits, Square	Wgt. Ea., Lbs.
TH-0-BB	8 to 10	* 3/8, 1/2, 3/4	* 7, 7 1/2, 11	* 3/16, 1/4, 5/16	5.2
TH-1-B	12 to 16	1/2, 3/4, 1 1/8	7 1/2, 11, 16	3/16, 1/4, 5/16	18.
TH-2-B	16 to 18	5/8, 1 1/8, 1 1/2	9 1/2, 13 1/4, 19	3/16, 1/2, 5/8	25.9
TH-3-B	20 to 22	3/4, 1 1/2, 1 3/4	11, 16, 23 1/4	1/2, 5/8, 3/4	42.4
TH-4-B	24 to 32	1 1/2, 1 3/4, 2	13 1/4, 19, 27 1/4	5/8, 3/4, 7/8	68.



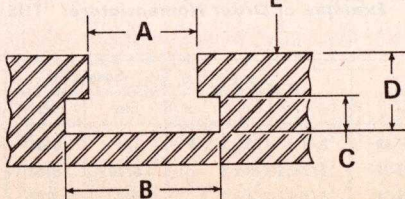
STANDARD DIMENSIONAL DATA AND SPECIAL MACHINING ORDER INFORMATION

Listed below are the standard dimensions of Williams 3-Bar Boring Tool Holders. Should the holder you order require special machining to fit a particular T-slot please furnish drawing and supply dimensions as indicated in sketch below.

No.	M	N	P	R	S	X	Y	Z
TH-0-BB	1-1/4	2	3/8	5/8	2-9/16	1-5/16	15/16	3/4
TH-1-B	2-1/2	3-1/8	9/16	1	3-7/8	2-1/2	1-15/16	1-3/8
TH-2-B	3	3-15/32	11/16	1-1/4	4-5/8	2-1/2	1-9/32	1-9/16
TH-3-B	3-9/16	4-1/4	13/16	1-1/4	5-1/16	2-27/32	2-7/8	1-15/16
TH-4-B	4	4-3/4	15/16	1-1/2	6-25/32	3-1/4	3-1/8	2-1/32

CENTERLINE OF SPINDLE

SUPPLY DIMENSIONS FOR T-SLOT AS INDICATED ON THIS DRAWING



See pages 108 and 109 for Bits for the above Tool Holders.

BORING TOOL HOLDERS



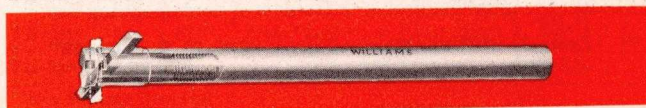
Furnished with either Sleeve or Plain Bar, 1 each 45° and 90° Bit and 2 Wrenches

Sleeves or bushings are unnecessary for Bars of various sizes. Sleeve-bar fastening provides for rapid adjustment of straight or angular Bits. Plain Bar provides for use of straight or angular Bits.

MILITARY DESCRIPTION: 00-H-581A, TYPE VI, CLASS 1 STYLE B

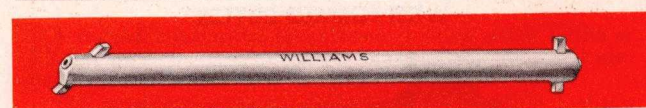
*Bar is held with single screw.

No. With		Holder Size	Capacity for Bars, Diam.	Standard Bars		Lathes Approx. Swing	Wgt. Ea., Lbs.	
Sleeve Bar	Plain Bar			Dia.	Sleeve No.			Plain No.
TH-00B	TH-00BX	$3/16 \times 3/4$	$3/16$ to $1/2$	$1/2$	TH-0B	TH-0BX	6 to 8	1.2
TH-8	TH-8X	$3/8 \times 7/4$	$1/2$ to $5/8$	$5/8$	TH-08	TH-08X	9 to 10	2.
TH-9	TH-9X	$1/2 \times 1\ 1/8$	$1/2$ to $3/4$	$3/4$	TH-09	TH-09X	11 to 14	3.3
TH-10	TH-10X	$5/8 \times 1\ 3/8$	$3/4$ to $15/16$	$15/16$	TH-010	TH-010X	14 to 16	6.6
TH-11	TH-11X	$3/4 \times 1\ 1/2$	$1/2$ to $1\ 1/8$	$1\ 1/8$	TH-011	TH-011X	16	11.
*TH-12	TH-12X	$7/8 \times 1\ 3/4$	$1\ 1/2$ to $1\ 5/8$	$1\ 5/8$	TH-012	TH-012X	18	16.



Furnished with Two Bits and Wrench

No.	Size	For Use with Holders Nos.	Square Bits		Wgt. Ea., Lbs.
			Size and Length	No. Use at Angles	
TH-0B	1/2 x 7 5/8	TH-00B thru TH-11 TH-0-BB and TH-1-B	3/16 x 1 3/16 x 2	2321 90° 2301 45°	.45
TH-08	5/8 x 9 1/8	TH-8 thru TH-11 TH-2-B	3/16 x 1 3/16 x 2	2321 90° 2301 45°	.91
TH-09	3/4 x 11	TH-9 thru TH-11 TH-0BB, TH-1-B, TH-3-B	1/4 x 1 1/2 1/4 x 2 1/2	2323 90° 2302 45°	1.5
TH-010	15/16 x 13 1/4	TH-10 and TH-11 TH-2-B and TH-4-B	3/16 x 1 1/2 3/16 x 2 1/2	2325 90° 2303 45°	2.9
TH-011	1 1/8 x 16	TH-11 TH-1-B and TH-3-B	3/8 x 1 1/2 3/8 x 3	2327 90° 2304 45°	4.9
TH-012	1 1/8 x 19	TH-12 TH-2-B and TH-4-B	3/8 x 2 1/2 3/8 x 3	2328 90° 2304 45°	7.6
TH-013	1 1/2 x 23 1/4	TH-3-B	7/16 x 2 1/2 7/16 x 3 1/2	2329 90° 2305 45°	12.1
TH-014	1 1/2 x 27 1/4	TH-4-B	1/2 x 2 1/2 1/2 x 4	2331 90° 2306 45°	20.4
TH-015	2 1/4 x 33	.....	5/8 x 3 5/8 x 4 1/2	2333 90° 2307 45°	38.8

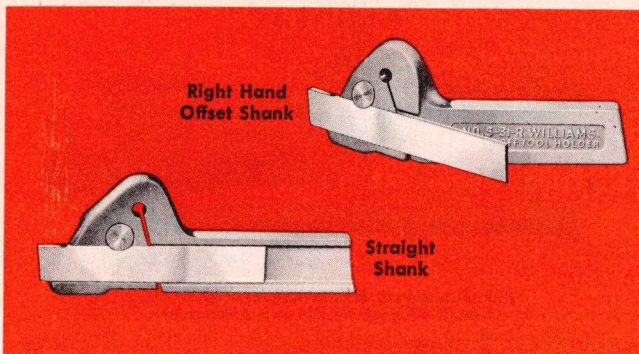


Furnished with Two Bits and Wrench

No.	Size	For Use with Holders Nos.	Square Bits		Wgt. Ea., Lbs.
			Size and Length	No. Use at Angles	
TH-0BX	1/2 x 8 1/8	TH-00BX thru TH-11X TH-0BB and TH-1-B	3/16 x 1 3/16 x 2	2321 90° 2301 45°	.44
TH-08X	5/8 x 10 1/8	TH-8X thru TH-11X TH-2-B	3/16 x 1 3/16 x 2	2321 90° 2301 45°	.88
TH-09X	3/4 x 12 1/8	TH-9X thru TH-11X TH-0BB, TH-1-B, TH-3-B	1/4 x 1 1/2 1/4 x 2 1/2	2323 90° 2302 45°	1.5
TH-010X	15/16 x 14 1/8	TH-10X and TH-11X TH-2-B and TH-4-B	3/16 x 1 1/2 3/16 x 2 1/2	2325 90° 2303 45°	2.8
TH-011X	1 1/8 x 16 3/4	TH-11X TH-1-B and TH-3-B	3/8 x 1 1/2 3/8 x 3	2327 90° 2304 45°	4.8
TH-012X	1 1/8 x 20	TH-12X TH-2-B and TH-4-B	3/8 x 2 1/2 3/8 x 3	2328 90° 2304 45°	7.5
TH-013X	1 1/2 x 23 1/2	TH-3-B	7/16 x 2 1/2 7/16 x 3 1/2	2329 90° 2305 45°	12.
TH-014X	1 1/2 x 28	TH-4-B	1/2 x 2 1/2 1/2 x 4	2331 90° 2306 45°	20.6
TH-015X	2 1/4 x 34	.....	5/8 x 3 5/8 x 4 1/2	2333 90° 2307 45°	38.8



SPRING CUTTING-OFF and SIDE HOLDERS CUTTING-OFF and SIDE TOOL HOLDERS



Furnished with Finished Cutting-off Blade and Wrench

Due to the "goose-neck" form of the Holder, Cutter Blade is relieved of excess pressure; no chattering, no "climbing" of the work on the tool—the real cause of nearly all breakage of cutting-off tools. Particularly efficient with automatic feed.

The cam-fastening is always rapid and positive—the greater the pressure the tighter the lock.

One Holder takes both Cutting-Off and Side Blades which are H.S. Steel, hardened and ground on one end ready for use. Blades are interchangeable in Holders of corresponding size.

Example of Order Nomenclature: "THS-31-R HOLDER"

MILITARY DESCRIPTION: OO-H-581-A, TYPE III, CLASS 1, 3, STYLE B

Number		Holder, Size	Cutter Blades High Speed Steel		For Lathes Approx. Swing Inches	Wgt. Ea., Lbs.
Straight Shank	Offset Shank Right Hand		Finished Size	No. Straight and Right		

HOLDERS WITH CUTTING-OFF BLADES

.....	THS-30-RA	3/8 x 13/16	3/32 x 5/8	2402	9 to 10	.84
THS-20	THS-30-R	3/8 x 31/32	3/32 x 5/8	2402	9 to 10	.85
THS-21	THS-31-R	1/2 x 1-3/16	1/8 x 3/4	2403	11 to 14	1.6
THS-22	THS-32-R	5/8 x 1-3/8	1/8 x 7/8	2404	14 to 16	2.6
THS-23	THS-33-R	3/4 x 1-5/8	3/16 x 1	2405	16	4.1



Furnished with Finished Cutting-off Blade and Wrench

The Cam-fastening is always rapid and positive—the greater the pressure, the tighter the lock.

One Holder takes both Cutting-Off and Side Blades which are H.S. Steel, hardened and ground on one end ready for use. Blades are interchangeable in Holders of corresponding size.

Example of Order Nomenclature: "TH-19 HOLDER"

MILITARY DESCRIPTION: OO-H-581-A, TYPE III, CLASS 1, 2, 3, STYLE A

Number			Holder, Size	Cutter Blades High Speed Steel			For Lathes of Approx. Swing Inches	Wgt. Each, Lbs.
Straight Shank	Offset Shank			Finished Size	Strgt. and Right Hand No.	Left Hand No.		
	Right Hand	Left Hand						

HOLDERS WITH CUTTING-OFF BLADES

TH-19	TH-29-R	TH-29-L	5/16 x 13/16	3/32 x 1/2	2401	2451	6 to 8	.47
TH-20	TH-30-R	TH-30-L	3/8 x 31/32	3/32 x 5/8	2402	2452	9 to 10	.73
TH-21	TH-31-R	TH-31-L	1/2 x 1-3/16	1/8 x 3/4	2403	2453	11 to 14	1.4
TH-22	TH-32-R	TH-32-L	5/8 x 1-3/8	1/8 x 7/8	2404	2454	14 to 16	2.2
TH-23	TH-33-R	TH-33-L	3/4 x 1-5/8	3/16 x 1	2405	2455	16	3.5
TH-24	TH-34-R	TH-34-L	7/8 x 1-3/4	3/16 x 1-1/8	2406	2456	18	4.7
TH-25	TH-35-R	TH-35-L	7/8 x 1-3/4	1/4 x 1-1/8	2407	2457	18	5.

WILLIAMS THREADING TOOL HOLDERS WITH FORMED CUTTER



Furnished with Finished Cutter and Wrench

In re-sharpening the Formed Cutter, it is necessary to grind its top edge only. The point will always retain proper form and angle. High Speed Formed Cutter is ground to an included angle of 60°.

Hardened stop screw provides accurate adjustment.

MILITARY DESCRIPTION: OO-H-581-A, TYPE IV, CLASS 1

No.	Holder, Size	Cutter, Size No.	For Lathes of Approx. Swing Inches	Weight Ea., Lbs.
TH-00-T	5/16 3/4 x 5	8151	7 to 10	.61
TH-50	3/8 7/8 x 5	8151	10 to 12	.80
TH-51	1/2 x 1-1/8 x 5-3/4	8153	14 to 16	1.3
TH-52	5/8 x 1-3/8 x 7	8155	16 to 18	2.3
TH-53	3/4 x 1-5/8 x 8	8157	18 to 20	3.3

See pages 108 and 109 for Bits and Blades for the above Tool Holders.

WILLIAMS THREADING TOOL HOLDERS WITH LOCKABLE SPRING HEAD



Furnished with Finished Bit and Wrench

For fine and coarse threading. Tighten nut for heavy cuts; loosen to provide spring-tool for finishing work. High Speed Bit is ground, at an included angle of 60°.

Example of Order Nomenclature: "THS-51 HOLDER"

MILITARY DESCRIPTION: OO-H-581-A, TYPE IV, CLASS 2

No.	Holder, Size	Square Bit		For Lathes of Approx. Swing Inches	Weight Ea., Lbs.
		Size	No.		
THS-50	3/8 x 7/8 x 5-1/4	1/4	8101	10 to 12	.75
THS-51	1/2 x 1-1/8 x 6	5/16	8102	14 to 16	1.5
THS-52	5/8 x 1-3/8 x 7	3/8	8103	16 to 18	2.5



KNURLING TOOL HOLDERS



Nos. TH-00-K to TH-2-K
with Self-centering Head
and One Pair of Knurls.

Nos. TH-3-K-0 to TH-3-K-2
with Revolving Head and
Three Pairs of Knurls.



Nos. TH-00-K to TH-2-K, with sturdy, self-centering heads, are each fitted with ONE pair of Knurls for fine, medium, or coarse work. Unless otherwise specified, "Diamond" Pattern, Medium Knurls will be supplied.

Nos. TH-3-K-0 to TH-3-K-2 carry THREE pairs of Knurls for fine, medium and coarse work. Pins are of tempered Tool Steel.

Example of Order Nomenclature:

"TH-1-K HOLDER with COARSE DIAMOND KNURLS"

MILITARY DESCRIPTION: 00-H-581A, TYPE V, CLASS 1, 2

No.	Holder, Size	Knurls, Size			For Lathes of Approx. Swing, In.	Wgt. Ea., Lbs.
		Diam.	Face	Hole		
SELF-CENTERING HEAD—ONE PAIR OF KNURLS						
TH-00-K	5/16 x 3/4 x 5	5/8	3/16	7/32	7 to 10	.53
TH-0-K	3/8 x 7/8 x 5-1/2	5/8	3/16	7/32	10 to 12	.63
TH-1-K	1/2 x 1-1/8 x 6-5/8	3/4	1/4	1/4	14 to 16	1.3
TH-2-K	5/8 x 1-3/8 x 7-1/2	3/4	1/4	1/4	16 to 18	1.9
REVOLVING HEAD—THREE PAIRS OF KNURLS						
TH-3-K-0	3/8 x 7/8 x 5-1/2	5/8	3/16	7/32	10 to 12	1.
TH-3-K-1	1/2 x 1-1/8 x 6-5/8	3/4	1/4	1/4	14 to 16	1.8
TH-3-K-2	5/8 x 1-3/8 x 6-5/8	3/4	1/4	1/4	16 to 18	2.2

WILLIAMS

KNURLS for KNURLING TOOL HOLDERS

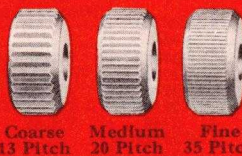
DIAMOND PATTERN



Coarse 13 Pitch Medium 20 Pitch Fine 33 Pitch

Note: "Pitch" means number of teeth per linear inch.

STRAIGHT-LINE PATTERN



Coarse 13 Pitch Medium 20 Pitch Fine 33 Pitch

Illustrations above show actual size of Knurling

Williams Knurls being accurately cut, assure sharp and perfect teeth in the knurled product. All Knurls are made from high speed steel and are specially hardened and tempered.

Furnished in pairs to fit standard makes of Knurling Tools.

MILITARY DESCRIPTION: 00-H-581A, TYPE V, CLASS 1, 2

Knurl No.	For Knurling Tool No.	Pitch	Knurls, Size				Wgt., Per Pair
			Dia.	Thick- ness	Face	Hole	
DIAMOND PATTERN							
8227	TH-00-K, TH-0-K, TH-3-K-0	Fine	5/8	5/16	3/16	7/32	.05
8224	TH-00-K, TH-0-K, TH-3-K-0	Medium	5/8	5/16	3/16	7/32	.05
8221	TH-00-K, TH-0-K, TH-3-K-0	Coarse	5/8	5/16	3/16	7/32	.05
8228	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Fine	3/4	3/8	1/4	1/4	.08
8225	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Medium	3/4	3/8	1/4	1/4	.08
8222	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Coarse	3/4	3/8	1/4	1/4	.08
STRAIGHT-LINE PATTERN							
8267	TH-00-K, TH-0-K, TH-3-K-0	Fine	5/8	5/16	3/16	7/32	.05
8264	TH-00-K, TH-0-K, TH-3-K-0	Medium	5/8	5/16	3/16	7/32	.05
8261	TH-00-K, TH-0-K, TH-3-K-0	Coarse	5/8	5/16	3/16	7/32	.05
8268	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Fine	3/4	3/8	1/4	1/4	.08
8265	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Medium	3/4	3/8	1/4	1/4	.08
8262	TH-1-K, TH-2-K, TH-3-K-1, TH-3-K-2	Coarse	3/4	3/8	1/4	1/4	.08

EXTENSION SHAPER TOOLS

The design and extreme rigidity of this Shaper Tool adapts it for cutting internal keyways, die work or any type of shaper work where extra clearance is needed.

MILITARY DESCRIPTION: 00-H-581A, TYPE VIII



Furnished with Bar, Bit and Wrenches

No.	Holder, Size	Size Bar	Bar No.	Bit Square	Bit No.	Weight Ea., Lbs.
*TH-46	3/8 x 7/8	1/2 x 7-1/2	TH-0530	3/16	2321	1.1
TH-47	1/2 x 1-1/8	3/4 x 10	TH-0597	5/16	2325	3.3
TH-48	5/8 x 1-3/8	15/16 x 12	TH-0598	3/8	2327	6.

*Instead of split collar, as illustrated, bar is held by two hollow set screws.

EXTRA BARS and BUSHINGS

Each Bar furnished with High Speed Bit and Wrench

Bar No.	Size Bar	Square Bit		Wgt. Ea., Lbs.	Order Bushing No.	Fits Holder No.	Wgt. Ea., Lbs.
		Size	No.				
TH-0530	1/2 x 7-1/2	3/16	2321	.75	TH-0530-A TH-0530-B	*TH-46	.....
						TH-47	.13
						TH-48	.31
TH-0532	5/8 x 8-1/2	1/4	2323	1.1	TH-0532-A TH-0532-B	TH-47	.06
						TH-48	.25
TH-0597	3/4 x 10	5/16	2325	1.6	TH-0597-A	*TH-47	.....
TH-0598	15/16 x 12	3/8	2327	2.7		TH-48	.19
						*TH-48	.....

*No Bushing Required

WILLIAMS

PLANING TOOL HOLDERS



This construction affords most ready release of Bit for easy adjustment.



The serrations in Holder provide maximum number of Bit adjustments.



Furnished with Bit and Wrench

A rugged, substantial and efficient tool on either Lathe or Planer. Because of its numerous angles of adjustment it also makes an excellent Offset Turning Tool.

The construction assures perfect seat and holding qualities for the Bits; the convex face of Clamp Nut provides uniform locking pressure for Bits of either square or rectangular form; the numerous serrations in Holder provide for quick, fine and maximum number of Bit adjustments.

The serrated washer, or Adjustment Ring, which sustains the fastening and working strains, is hardened and tempered.

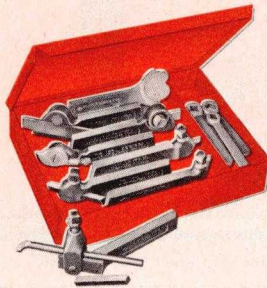
MILITARY DESCRIPTION: 00-H-581A, TYPE VII

No.	Holder, Size	Bit, Size	Cutter No.	Weight Ea., Lbs.
TH-40	1/2 x 1 x 7	1/4 x 3/8	2351	2.2
TH-401	5/8 x 1-1/4 x 8-1/2	5/16 x 7/16	2352	3.8
TH-41	3/4 x 1-1/2 x 10-1/4	3/8 x 1/2	2353	6.
TH-42	1 x 1-3/4 x 13-1/4	1/2 x 3/4	2354	11.1
TH-43	1-3/8 x 2 x 16-1/2	5/8 x 7/8	2355	20.6
TH-44	1-3/4 x 2-3/8 x 19	3/4 x 1	2356	31.
TH-45	2-1/8 x 2-3/4 x 22	7/8 x 1-1/8	2357	53.

See pages 108 and 109 for Bits for the above Tool Holders.

SEVEN-TEN TOOL HOLDERS

FOR USE ON LATHES WITH 7 to 10 INCH SWING



SET No. TH-8H
8 Tool Holders
and 3 Wrenches

In Metal Box
9-3/8 x 7-1/4 x 1-3/4"
Weight, 7 lbs.

Holders are also sold
individually.

Shanks are drop-forged from selected steel and hardened. Nose of the Holders is chamfered for use in cramped quarters. All H.S. Steel Bits and Blades are ground ready for use. The Threading-Tool Holder is supplied with a Formed Cutter, the point of which is ground to an included angle of 60°. In re-sharpening it is necessary to grind the top edge only. The Boring-Tool is furnished with Bar 1/4" round by 5" long, with point offset and ground and a 1/4" square bit.

Note: Knurling Tool is fitted with 8224 Medium Diamond Knurls only. Holder will take replacement Knurls as follows:—Diamond, 8227 Fine, 8221 Coarse—Straight Line, 8267 Fine, 8264 Medium, 8261 Coarse.

CONTENTS

No.	Tool Holder	Shank	Bits and Blades		Wgt.
			Size	No.	
TH-2010-S	Turning—Straight Shank	3/8 x 1 1/2	1/4 Sq.	2302	.63
TH-2010-R	Turning—R. H. Offset Shank	3/8 x 1 1/2	1/4 Sq.	2302	.64
TH-2010-L	Turning—L. H. Offset Shank	3/8 x 1 1/2	1/4 Sq.	2302	.64
TH-2040	Knurling—with Diamond Med. Knurls	3/8 x 3/4	Medium	8224	.59
TH-2020-S	Cut-Off—R. H. Straight Shank	3/8 x 1 1/2	3/32 x 5/8	2402	.63
TH-2020-R	Cut-Off—R. H. Offset Shank	3/8 x 1 1/2	3/32 x 5/8	2402	.69
TH-2050	Threading—with Formed Cutter	3/8 x 3/4	Formed	TH-2050-1	.66
TH-2030	Boring—Reversible—R. or L.	3/8 x 3/4	1/4 Sq.	2302	.88
			1/4 rd. x 5	8142	

WILLIAMS

SEVEN-TEN FINISHED BITS



1 Left Hand Turning
2 Round Nose Turning
3 Right Hand Turning
5 Threading Tool
6 Right Hand Corner
10 Brass Tool

SET No. TH-6-HC
In Cardboard Box
Weight, .25 lbs.

Made especially for use with Seven-Ten Tool Holders listed above.

Sold In Set Only

Seven-Ten Bits are made of 1/4" square High Speed Steel, carefully ground to shape and hardened. Set of six Bits cares for practically all lathe needs of school and home workers.

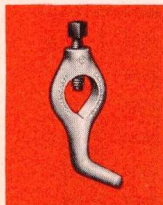
WILLIAMS

SEVEN-TEN LATHE DOGS

Williams "Seven-Ten" Dogs are drop-forged, not cast, and consequently, are light but unusually strong and durable.

Made especially for home lathe work; screws are hardened for lasting service.

*Opening in each Dog 1/16" over listed "Capacity" to easily accommodate rough or irregular pieces.



No.	*Capacity	Extra Screw No.	Wgt. Ea., Lbs.
LD-72A	1/2	LD-72A-3	.28
LD-73A	3/4	LD-73A-3	.50
LD-74A	1	LD-74A-3	.91
LD-76A	1-1/2	LD-76A-3	1.1

GROUND SQUARE BITS



For Turning and Light Boring Tool Holders

Example of Order Nomenclature: "2378 BIT"

MILITARY DESCRIPTION:

00-C-851A, TYPE I, STYLE 1, GRADE A, FINISH A, CLASS M-2 (H.S.)
00-C-851A, TYPE I, STYLE 1, GRADE B, FINISH A, CLASS M-34 (COBALT)

No.		To Fit Holders Nos.	Bit Size	Wgt. Ea., Lbs.
High Speed	Cobalt			
2376	2388	TH-000-L, TH-000-R, TH-000-S	3/16 x 3/16 x 2-1/2	.02
2376	2388	TH-00-L, TH-00-R, TH-00-S	3/16 x 3/16 x 2-1/2	.02
2377	2389	TH-0-L, TH-0-R, TH-0-S	1/4 x 1/4 x 2-1/2	.03
2377	2389	TH-2010-L, 2010-R, 2010-S	TH-15	1/4 x 1/4 x 2-1/2 .03
2378	2390	TH-1-L, TH-1-R, TH-1-S	TH-16	5/16 x 5/16 x 2-1/2 .07
2379	2391	TH-2-L, TH-2-R, TH-2-S	TH-17	3/8 x 3/8 x 3 .12
2380	2392	TH-3-L, TH-3-R, TH-3-S	TH-18	7/16 x 7/16 x 3-1/2 .19
2381	2393	TH-4-L, TH-4-R, TH-4-S	1/2 x 1/2 x 4	.29
2382	2394	TH-5-L, TH-5-R, TH-5-S	5/8 x 5/8 x 4-1/2	.50
2383	2395	TH-6-L, TH-6-R, TH-6-S	3/4 x 3/4 x 5	.81
2384	2396		7/8 x 7/8 x 6	1.3
2385	2397		1 x 1 x 7	2.

WILLIAMS

GROUND RECTANGULAR BITS



For Planing Tool Holders

Example of Order Nomenclature: "2708 BIT"

No.		To Fit Holders Nos.	Bit Size	Wgt. Ea., Lbs.
High Speed	Cobalt			
2701	2731	TH-40	1/4 x 3/8 x 2-1/2	.08
2704	2734	TH-40	1/4 x 1/2 x 6	.22
2706	2736	TH-401	5/16 x 7/16 x 3	.13
2708	2738	TH-41	3/8 x 1/2 x 3	.17
2710	2740	TH-41	3/8 x 1/2 x 6	.33
2711	2741	TH-41	3/8 x 5/8 x 4	.27
2714	2744	TH-41	3/8 x 3/4 x 4	.33
2718	2748	TH-42	1/2 x 3/4 x 4	.44
2719	2749	TH-42	1/2 x 3/4 x 6	.65
2722	2752	TH-43	5/8 x 7/8 x 6	.94
2723	2753	TH-44	3/4 x 1 x 6	1.3
2724	2754	TH-45	7/8 x 1-1/8 x 7	2.

WILLIAMS

GROUND CUTTING-OFF BLADES



For Straight, Right and Left Hand Cutting-Off Tool Holders

*Blades must be ground on opposite end for Left Hand use.

MILITARY DESCRIPTION:

00-C-851A, TYPE II, STYLE 2, GRADE A, FINISH A, CLASS M-2 (H.S.)
00-C-851A, TYPE II, STYLE 2, GRADE B, FINISH A, CLASS M-34 (COBALT)

No.		Straight and Right Hand		*Left Hand	Blade Size	Wgt. Ea., Lbs.
High Speed	Cobalt	To Fit Holders Nos.				
		Cutting-Off	Spring Cut-Off	Cut-Off		
2410	2540	TH-19, TH-29-R		TH-29-L	3/32 x 1/2 x 4-1/2	.05
2411	2541	TH-20, TH-30-R	THS-20-RA		3/32 x 5/8 x 5	.07
2411	2541	TH-2020-S&R	THS-20, THS-30-R	TH-30-L	3/32 x 5/8 x 5	.07
2412	2542	TH-21, TH-31-R	THS-21, THS-31-R	TH-31-L	1/8 x 3/4 x 5	.10
2413	2543	TH-22, TH-32-R	THS-22, THS-32-R	TH-32-L	1/8 x 7/8 x 6	.15
2414	2544	TH-23, TH-33-R	THS-23, THS-33-R	TH-33-L	3/16 x 1 x 6-1/2	.27
2415	2545	TH-24, TH-34-R		TH-34-L	3/16 x 1-1/8 x 7	.34
2416	2546	TH-25, TH-35-R		TH-35-L	1/4 x 1-1/8 x 7	.46
	2547				1/4 x 1-3/8 x 7	.54



HIGH-SPEED TOOL BITS

Made from selected tool steel of a grade which has excellent properties for general machining use. All are heat-treated to

combine maximum hardness and high wear-resistant properties for greatest cutting efficiency. Surfaces are unground.

FOR TURNING and LIGHT BORING TOOL HOLDERS

MILITARY DESCRIPTION:
00-C-851A, TYPE I, STYLE I, GRADE A, FINISH B, CLASS M-2

No.	To Fit Tool Holders Nos.		Bit Size	Wgt. Ea.
	Turning	Boring		
2301	TH-000-L, TH-000-R, TH-000-S	.....	3/16x3/16x2	.02
2301	TH-00-L, TH-00-R, TH-00-S	.....	3/16x3/16x2	.02
2302	TH-0-L, TH-0-R, TH-0-S	TH-2030	1/4 x 1/4 x 2-1/2	.05
2302	TH-2010-L, 2010-R, 2010-S	TH-15	1/4 x 1/4 x 2-1/2	.05
2303	TH-1-L, TH-1-R, TH-1-S	TH-16	5/16x5/16x2-1/2	.07
2304	TH-2-L, TH-2-R, TH-2-S	TH-17	3/8 x 3/8 x 3	.13
2305	TH-3-L, TH-3-R, TH-3-S	TH-18	7/16x7/16x3-1/2	.20
2306	TH-4-L, TH-4-R, TH-4-S	.....	1/2 x 1/2 x 4	.30
2307	TH-5-L, TH-5-R, TH-5-S	.....	5/8 x 5/8 x 4-1/2	.52
2308	TH-6-L, TH-6-R, TH-6-S	.....	3/4 x 3/4 x 5	.83

FOR BORING and SHAPER BARS

No.	To Fit Bar Nos.	Angle of Use	Bit Size	Wgt. Ea.
2321	TH-0B, TH-0BX, TH-08, TH-08X, TH-0530	90°	3/16 x 3/16 x 1	.01
2301	TH-0B, TH-0BX, TH-08, TH-08X	45°	3/16 x 3/16 x 2	.02
2323	TH-09, TH-09X, TH-0532	90°	1/4 x 1/4 x 1-7/32	.02
2302	TH-09, TH-09X	45°	1/4 x 1/4 x 2-1/2	.05
2325	TH-010, TH-010X, TH-0597	90°	5/16 x 5/16 x 1-7/16	.04
2303	TH-010, TH-010X	45°	5/16 x 5/16 x 2-1/2	.07
2327	TH-011, TH-011X, TH-0598	90°	3/8 x 3/8 x 1-13/16	.07
2304	TH-011, TH-011X	45°	3/8 x 3/8 x 3	.13
2328	TH-012, TH-012X	90°	3/8 x 3/8 x 2-1/16	.08
2304	TH-012, TH-012X	45°	3/8 x 3/8 x 3	.13
2329	TH-013, TH-013X	90°	7/16 x 7/16 x 2-3/16	.11
2305	TH-013, TH-013X	45°	7/16 x 7/16 x 3-1/2	.20
2331	TH-014, TH-014X	90°	1/2 x 1/2 x 2-1/2	.19
2306	TH-014, TH-014X	45°	1/2 x 1/2 x 4	.30
2333	TH-015, TH-015X	90°	5/8 x 5/8 x 3	.35
2307	TH-015, TH-015X	45°	5/8 x 5/8 x 4-1/2	.52

FOR STRAIGHT, RIGHT and LEFT HAND CUTTING-OFF TOOL HOLDERS

MILITARY DESCRIPTION:
00-C-851A, TYPE II, STYLE 2, GRADE A, FINISH B, CLASS M-2

Straight and Right Hand			Left Hand		Blade Size	Wgt. Ea., Lbs.
To Fit Tool Holders Nos.						
No.	Cutting-Off	Spring Cut-Off	No.	Cut-Off		
2401	TH-19, TH-29-R	.....	2451	TH-29-L	3/32x 1/2x4-1/2	.05
2402	TH-20, TH-30-R	THS-30-RA	.....	.....	3/32x 5/8x5	.07
2402	TH-2020-S&R	THS-20, THS-30-R	2452	TH-30-L	3/32x 5/8x5	.07
2403	TH-21, TH-31-R	THS-21, THS-31-R	2453	TH-31-L	1/8 x 3/4x5	.10
2404	TH-22, TH-32-R	THS-22, THS-32-R	2454	TH-32-L	1/8 x 7/8x6	.15
2405	TH-23, TH-33-R	THS-23, THS-33-R	2455	TH-33-L	3/16x1 x6-1/2	.27
2406	TH-24, TH-34-R	.....	2456	TH-34-L	3/16x1-1/8x7	.34
2407	TH-25, TH-35-R	.....	2457	TH-35-L	1/4 x1-1/8x7	.46

FOR STRAIGHT and RIGHT HAND SIDE TOOL HOLDERS

Straight and Right Hand			Blade Size	Wgt. Ea., Lbs.
To Fit Tool Holders Nos.				
No.	Cutting-Off	Spring Cut-Off		
2621	TH-19, TH-29-R	.....	1/8 x1/2x4-1/2	.06
2622	TH-20, TH-30-R	THS-20, 30-R, 30-R-L	5/32x5/8x5	.10
2623	TH-21, TH-31-R	THS-21, THS-31-R	3/16x3/4x6	.19
2624	TH-22, TH-32-R	THS-22, THS-32-R	1/4 x7/8x7	.33
2625	TH-23, TH-33-R	THS-23, THS-33-R	5/16x1 x8	.56
2626	TH-24, TH-34-R	.....	3/8 x1-1/8x9	.91

FORMED CUTTER
GROUND
READY FOR USE

FOR THREADING TOOL HOLDERS

No.	To Fit Holders Nos.	Size	Wgt. Ea.
8101	THS-50	1/4 x 1/4 x 2-1/2	.04
8102	THS-51	5/16 x 5/16 x 2-1/2	.05
8103	THS-52	3/8 x 3/8 x 3	.10
TH-2050-1	TH-2050	Formed	.04
8151	TH-00T, TH-50	Formed	.04
8153	TH-51	Formed	.08
8155	TH-52	Formed	.17
8157	TH-53	Formed	.20

FOR PLANING TOOL HOLDERS

No.	To Fit Holders Nos.	Bit Size	Wgt. Ea.
2351	TH-40	1/4 x 3/8 x 2-1/2	.06
2352	TH-401	5/16 x 7/16 x 3	.10
2353	TH-41	3/8 x 1/2 x 3-1/2	.18
2354	TH-42	1/2 x 3/4 x 4-1/4	.45
2355	TH-43	5/8 x 7/8 x 5	.79
2356	TH-44	3/4 x 1 x 6	1.3
2357	TH-45	7/8 x 1-1/8 x 7	2.

CARBIDE TURNING TOOL HOLDERS

FOR USE WITH CARBIDE TIPPED SINGLE POINT BITS



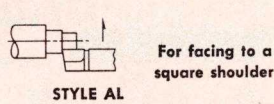
Furnished with Wrench but without Bit

In these holders the bit is held parallel to the shank, consequently, bits can be so ground as to provide maximum support for the cutting edge. Holders are broached for square bits up to 5/8" as listed on this page.

MILITARY DESCRIPTION: 00-H-581A, TYPE I, CLASS 1, 2, 3

Number			Holder, Size	Bit Shank Size, Square	For Lathes of Approx. Swing, In.	Wgt. Ea., Lbs.
Straight Shank	Offset Shank					
	Right	Left				
THT-0-S	THT-0-R	THT-0-L	3/8 x 15/16 x 6	1/4	9 to 10	.71
THT-1-S	THT-1-R	THT-1-L	1/2 x 1-1/4 x 7	5/16	11 to 14	1.5
THT-2-S	THT-2-R	THT-2-L	5/8 x 1-1/2 x 8	3/8	14 to 16	2.4
THT-3-S	THT-3-R	THT-3-L	3/4 x 1-3/4 x 9	7/16	16	3.7
THT-4-S	THT-4-R	THT-4-L	7/8 x 1-7/8 x 10	1/2	18	5.
THT-5-S	THT-5-R	THT-5-L	1 x 2-1/8 x 12	5/8	20 to 24	8.2

STYLES AR and AL — SHOULDERING

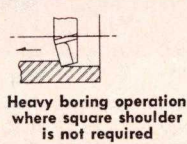
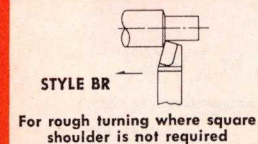


MILITARY DESCRIPTION: 00-C-00845

R—Right Hand Only in Stock

No.		Shank Size	Tip Size	Nose R.	Grades Stocked			Wgt.
R.H.	L.H.				Group 1	Group 2		
					CQ2	CY14	CY16	
AR-4	AL-4	1/4 x 1/4 x 2	3/32 x 3/16 x 3/16	1/64	X	X	X	.03
AR-5	AL-5	5/16 x 5/16 x 2 1/4	3/32 x 1/4 x 1/2	1/64	X	X	X	.06
AR-6	AL-6	3/8 x 3/8 x 2 1/2	3/32 x 1/4 x 1/2	1/64	X	X	X	.07
AR-7	AL-7	7/16 x 7/16 x 3	3/32 x 1/4 x 1/2	1/32	X	X	R	.16
AR-8	AL-8	1/2 x 1/2 x 3 1/2	3/8 x 5/16 x 3/8	1/32	X	X	X	.25
AR-10	AL-10	5/8 x 5/8 x 4	3/32 x 3/8 x 3/4	1/32	X	X	X	.44
AR-12	AL-12	3/4 x 3/4 x 4 1/2	3/16 x 1/2 x 1/2	1/32	X	X	X	.63

STYLES BR and BL — TURNING (Lead Angle)



MILITARY DESCRIPTION: 00-C-00845

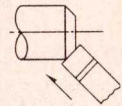
No.		Shank Size	Tip Size	Nose R.	Grades Stocked			Wgt.
R.H.	L.H.				Group 1	Group 2		
					CQ2	CY14	CY16	
BR-4	BL-4	$\frac{1}{4} \times \frac{1}{4} \times 2$	$\frac{3}{32} \times \frac{3}{16} \times \frac{3}{16}$	$\frac{1}{64}$	X	X	X	.03
BR-5	BL-5	$\frac{5}{16} \times \frac{5}{16} \times 2\frac{1}{2}$	$\frac{3}{32} \times \frac{1}{4} \times \frac{1}{2}$	$\frac{1}{64}$	X	X	X	.06
BR-6	BL-6	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{1}{2}$	$\frac{3}{32} \times \frac{1}{4} \times \frac{1}{2}$	$\frac{1}{64}$	X	X	X	.07
BR-7	BL-7	$\frac{7}{16} \times \frac{7}{16} \times 3$	$\frac{3}{32} \times \frac{1}{4} \times \frac{1}{2}$	$\frac{1}{32}$	X	...	X	.16
BR-8	BL-8	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$	$\frac{1}{8} \times \frac{5}{16} \times \frac{5}{8}$	$\frac{1}{32}$	X	X	X	.25
BR-10	BL-10	$\frac{5}{8} \times \frac{5}{8} \times 4$	$\frac{3}{32} \times \frac{3}{8} \times \frac{3}{4}$	$\frac{1}{32}$	X	X	X	.44
BR-12	BL-12	$\frac{3}{4} \times \frac{3}{4} \times 4\frac{1}{2}$	$\frac{3}{16} \times \frac{1}{2} \times \frac{1}{2}$	$\frac{1}{32}$	X	X	X	.63

CARBIDE TIPPED SINGLE POINT BITS

STYLE C — CHAMFERING



These bits offer a flexible range of carbide tooling to shops with conventional lathe equipment. They are designed primarily for use in Williams Carbide Holders, except the 3/4" square shank sizes which are most often used in open side tool posts. Tips and shanks are accurately ground for clearance angles.

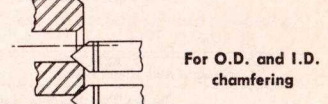
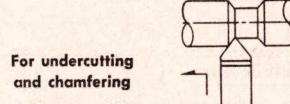


STYLE C
For Chamfering

Example of Order Nomenclature: "C-5 BIT GRADE CQ2"

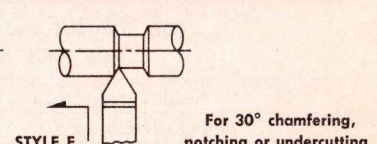
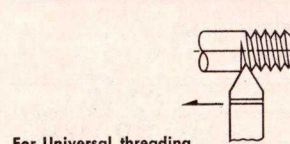
No.	Shank Size	Tip Size	Grades Stocked			Wgt.
			Group 1	Group 2		
				CQ2	CY14		CY16
C-4	1/4 x1/4 x2	1/16x1/4 x5/16	X	X	X	.03
C-5	5/16x5/16x2-1/4	3/32x5/16x3/8	X	X	X	.06
C-6	3/8 x3/8 x2-1/2	3/32x3/8 x1/2	X	X	X	.07
C-7	7/16x7/16x3	3/32x7/16x1/2	X	...	X	.16
C-8	1/2 x1/2 x3-1/2	1/8 x1/2 x1/2	X	X	X	.25
C-10	5/8 x5/8 x4	5/32x5/8 x5/8	X	X	X	.44
C-12	3/4 x3/4 x4-1/2	3/16x3/4 x3/4	X	X	X	.63

STYLE D — UNDERCUTTING and CHAMFERING



No.	Shank Size	Tip Size	Grades Stocked			Wgt.
			Group 1	Group 2		
			CQ2	CY14	CY16	
D-4	1/4 x 1/4 x 2	1/16 x 1/4 x 3/8	X	X	X	.03
D-5	5/16 x 5/16 x 2 1/4	3/32 x 5/16 x 3/8	X	X	X	.06
D-6	3/8 x 3/8 x 2 1/2	3/32 x 3/8 x 1/2	X	X	X	.07
D-7	7/16 x 7/16 x 3	3/32 x 7/16 x 1/2	X	....	X	.16
D-8	1/2 x 1/2 x 3 1/2	1/8 x 1/2 x 1/2	X	X	X	.25
D-10	5/8 x 5/8 x 4	5/32 x 5/8 x 5/8	X	X	X	.44
D-12	3/4 x 3/4 x 4 1/2	3/16 x 3/4 x 3/4	X	....	X	.63

STYLE E — 60° THREADING



No.	Shank Size	Tip Size	Grades Stocked		Wgt.
			Group 1	Group 2	
			CQ2	CY16	
E-4	1/4 x 1/4 x 2	1/16 x 1/4 x 5/16	X	...	.03
E-5	5/16 x 5/16 x 2 1/4	3/32 x 5/16 x 3/8	X	X	.06
E-6	3/8 x 3/8 x 2 1/2	3/32 x 3/8 x 1/2	X	X	.07
E-8	1/2 x 1/2 x 3 1/2	1/8 x 1/2 x 1/2	X	X	.25
E-10	5/8 x 5/8 x 4	5/32 x 5/8 x 5/8	X	X	.44
E-12	3/4 x 3/4 x 4 1/2	3/16 x 3/4 x 3/4	X	X	.63



Observe proper listed capacity when lifting with hoist hooks and eyebolts. Also note working load factors and angle loading guide on pages 112 and 113. OSHA regulations recommend annual magnaflux inspection of hoist hooks.



THIS IS
THE TEAM
THAT DELIVERS

TOOLPOWER

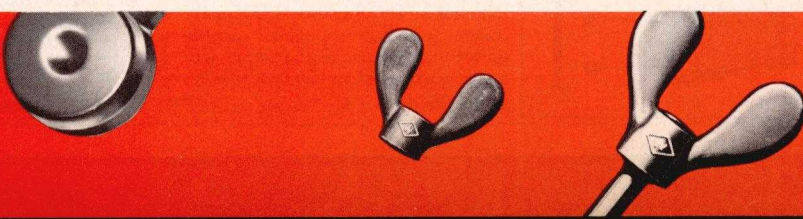
WITH THE SPEED AND ECONOMY
OF LOCAL DISTRIBUTOR SERVICE



Section 9 STOCK FORGINGS

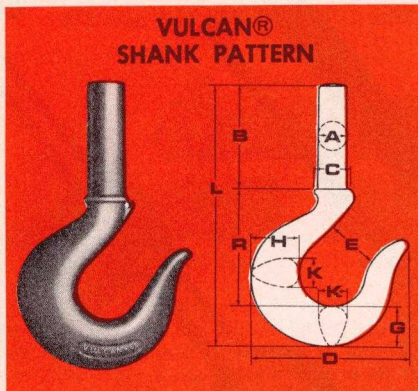
9

STOCK FORGINGS





DROP-FORGED HOIST HOOKS

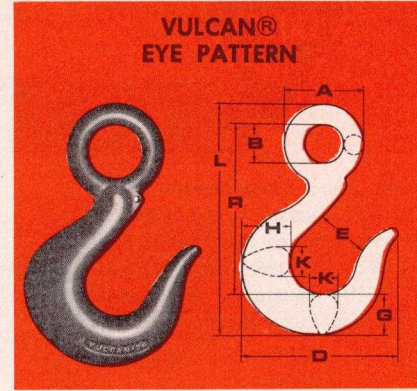


Heat-treating. Vulcan® Carbon or Alloy Steel Hooks are accurately heat-treated after forging for maximum strength and toughness. Both carbon and alloy steel hooks have high impact-resistance. High ductility permits spread with minimum liability of breakage.

Proof-Testing. To insure proper service at listed capacities Vulcan® Hoist Hooks are proof-tested after heat-treatment to Military Standards. Magnaflux inspection available on special order.

Hook Latches. All Williams Hoist Hooks are furnished with drilled boss for assembly of hook latch kits. See table below for details on Hook Latch Kits.

Hooks of special materials or lengths made to order. Use of a Safety Factor of 5 is recommended.



Example of Order Nomenclature: "HH-32 HOOK, HSL-12-32 LATCH"

No.	Capacity Tons of 2000 lbs.				D I M E N S I O N S											Dimensions with Hook Latch		Wgt. Each, Lbs.
	Working Load		Avg. Load at Elastic Limit	Approx. Load to Straighten Out	A	†B	C	D	E	G	H	K	L	R	E	M		
	Factor of Safety = 4	Factor of Safety = 5																

SHANK PATTERN HOIST HOOKS

Hook shanks are not machined. All hook shanks are 1/16 to 3/16" larger than listed diameter, depending on size, to allow for machining.

*These hooks made of Alloy Steel.

†Shanks can be made longer at an additional charge per extra inch or fraction thereof.

MILITARY DESCRIPTION: SAFETY SHANK PATTERN — MIL-H-19253B, TYPE IV, CLASS 1, 2

HH-2	.8	.66	2.2	3.3	1/2	2	11/16	3	1	25/32	15/16	9/16	5-1/32	2-1/4	7/8	25/32	.62
HH-3	1.0	.8	2.6	4.0	9/16	2-1/4	3/4	3-3/16	1-1/16	27/32	1	5/8	5-17/32	2-7/16	31/32	15/16	.81
HH-4	1.1	.9	2.9	4.5	5/8	2-1/2	7/8	3-9/16	1-1/8	1	1-1/8	11/16	6-1/8	2-5/8	1-1/32	15/16	1.2
HH-5	1.8	1.4	4.5	7.0	3/4	2-3/4	1	4	1-1/4	1-5/32	1-11/32	27/32	6-27/32	2-15/16	1-1/8	1-1/8	1.8
HH-6	2.75	2.2	7.1	11.0	7/8	3	1-5/32	4-9/16	1-3/8	1-11/32	1-9/16	31/32	7-5/8	3-1/4	1-7/32	1-1/8	2.7
HH-7	3.1	2.5	8.1	12.5	1	3-1/4	1-5/16	5-1/16	1-1/2	1-1/2	1-25/32	1-1/8	8-3/8	3-5/8	1-5/16	1-15/32	3.8
HH-8	3.75	3.0	9.7	15.0	1-1/8	3-1/2	1-7/16	5-7/8	1-3/4	1-11/16	2	1-1/4	9-5/16	4-1/8	1-5/8	1-1/2	5.3
HH-9	5.0	4.0	13.0	20.0	1-1/4	3-3/4	1-19/32	6-1/2	1-7/8	1-7/8	2-3/16	1-3/8	10-1/4	4-5/8	1-3/4	1-11/16	7.4
HH-10	5.25	4.2	13.6	21.0	1-3/8	4	1-3/4	7-3/16	2-1/16	2-1/32	2-13/32	1-17/32	11-5/32	5-1/8	1-7/8	1-15/16	9.8
HH-11	5.5	4.4	14.3	22.0	1-1/2	4-1/4	1-15/16	7-11/16	2-1/4	2-7/32	2-5/8	1-21/32	12-3/32	5-5/8	2-1/16	2-1/8	12.2
HH-12	8.75	7.0	22.7	35.0	1-5/8	4-1/2	2-1/8	8-9/16	2-1/2	2-17/32	2-31/32	1-13/16	13-5/32	6-1/8	2-5/16	2-5/32	17.0
HH-13	11.25	9.0	28.3	45.0	1-3/4	5	2-1/4	9-9/16	3	2-25/32	3-9/32	1-15/16	14-17/32	6-3/4	2-25/32	2-1/2	20.4
HH-14	12.5	10.0	32.5	50.0	2	5-1/2	2-9/16	11-7/16	3-3/8	3-7/32	3-13/16	2-7/32	16-9/16	7-9/16	3-5/32	2-13/16	31.9
HH-15	20.0	16.0	55.0	80.0	2-3/8	6	3	13-7/8	4	4-3/16	4-15/16	2-5/8	18-11/16	8-1/2	3-3/4	3-1/16	54.3
*HH-15A	23.75	19.0	65.0	95.0	2-3/8	6	3	13-7/8	4	4-3/16	4-15/16	2-5/8	18-11/16	8-1/2	3-3/4	3-1/16	54.3
HH-16	25.0	20.0	65.0	100.0	2-3/4	7	3-1/2	15-5/8	4-7/16	4-13/16	5-21/32	3-1/16	21-7/8	10-1/16	4-3/16	3-11/16	88.8
*HH-16A	30.0	24.0	81.25	120.0	2-3/4	7	3-1/2	15-5/8	4-7/16	4-13/16	5-21/32	3-1/16	21-7/8	10-1/16	4-3/16	3-11/16	88.8
HH-17-12"	58.75	47.0	153.0	235.0	4-1/16	12	5-3/8	19	5-1/4	6-1/4	7-3/8	3-7/8	30-13/16	12-9/16	.....	.....	200.0
*HH-17A-12"	68.75	55.0	178.0	275.0	4-1/16	12	5-3/8	19	5-1/4	6-1/4	7-3/8	3-7/8	30-13/16	12-9/16	.....	.....	200.0
HH-17-24"	58.75	47.0	153.0	235.0	4-1/16	24	5-3/8	19	5-1/4	6-1/4	7-3/8	3-7/8	42-13/16	12-9/16	.....	.....	244.0
*HH-17A-24"	68.75	55.0	178.0	275.0	4-1/16	24	5-3/8	19	5-1/4	6-1/4	7-3/8	3-7/8	42-13/16	12-9/16	.....	.....	244.0

EYE PATTERN HOIST HOOKS

*These hooks made of Alloy Steel.

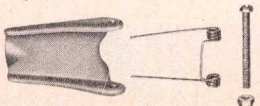
MILITARY DESCRIPTION: REGULAR EYE PATTERN — RR-C-271A-2, TYPE V, CLASS 3

SAFETY EYE PATTERN — MIL-H-19253B, TYPE I, CLASS 1

HH-22	.8	.66	2.2	3.3	1-1/2	3/4	.....	3	1	25/32	15/16	9/16	4-13/32	3-1/4	7/8	25/32	.56
HH-23	1.0	.8	2.6	4.0	1-3/4	7/8	.....	3-3/16	1-1/16	29/32	1	5/8	4-29/32	3-5/8	31/32	15/16	.76
HH-24	1.1	.9	2.9	4.5	2	1	.....	3-9/16	1-1/8	1	1-1/8	11/16	5-15/32	4	1-1/32	15/16	1.2
HH-25	1.8	1.4	4.5	7.0	2-1/4	1-1/8	.....	4	1-1/4	1-5/32	1-11/32	27/32	6-7/32	4-1/2	1-1/8	1-1/8	1.7
HH-26	2.75	2.2	7.1	11.0	2-1/2	1-1/4	.....	4-9/16	1-3/8	1-11/32	1-9/16	31/32	6-29/32	4-15/16	1-7/32	1-1/8	2.6
HH-27	3.1	2.5	8.1	12.5	2-3/4	1-3/8	.....	5-1/16	1-1/2	1-1/2	1-25/32	1-1/8	7-3/4	5-9/16	1-5/16	1-15/32	3.6
HH-28	3.75	3.0	9.7	15.0	3-1/8	1-1/2	.....	5-7/8	1-3/4	1-11/16	2	1-1/4	8-11/16	6-1/4	1-5/8	1-1/2	5.0
HH-29	5.0	4.0	13.0	20.0	3-3/8	1-5/8	.....	6-1/2	1-7/8	1-7/8	2-3/16	1-3/8	9-5/8	6-15/16	1-3/4	1-11/16	7.3
HH-30	5.25	4.2	13.6	21.0	3-5/8	1-3/4	.....	7-3/16	2-1/16	2-1/32	2-13/32	1-17/32	10-17/32	7-5/8	1-7/8	1-15/16	9.3
HH-31	5.5	4.4	14.3	22.0	4-1/4	2	.....	7-11/16	2-1/4	2-7/32	2-5/8	1-21/32	11-23/32	8-1/2	2-1/16	2-1/8	12.3
HH-32	8.75	7.0	22.7	35.0	4-7/8	2-3/8	.....	8-9/16	2-1/2	2-17/32	2-31/32	1-13/16	13-3/32	9-7/16	2-5/16	2-5/32	18.1
HH-33	11.25	9.0	28.3	45.0	5-1/2	2-3/4	.....	9-9/16	3	2-25/32	3-9/32	1-15/16	14-25/32	10-3/4	2-25/32	2-1/2	23.6
HH-34	12.5	10.0	32.5	50.0	6-3/8	3-1/8	.....	11-7/16	3-3/8	3-7/32	3-13/16	2-7/32	16-29/32	12-5/16	3-5/32	2-13/16	35.5
HH-35	20.0	16.0	55.0	80.0	7	3-1/2	.....	13-7/8	4	4-3/16	4-15/16	2-5/8	19-15/16	14	3-3/4	3-1/16	57.6
*HH-35A	23.75	19.0	65.0	95.0	7	3-1/2	.....	13-7/8	4	4-3/16	4-15/16	2-5/8	19-15/16	14	3-3/4	3-1/16	57.6
HH-36	25.0	20.0	65.0	100.0	8-1/2	4	.....	16-5/8	4-7/16	4-13/16	5-21/32	3-1/16	22-15/16	15-7/8	4-3/16	3-11/16	86.8
*HH-36A	30.0	24.0	81.25	120.0	8-1/2	4	.....	16-5/8	4-7/16	4-13/16	5-21/32	3-1/16	22-15/16	15-7/8	4-3/16	3-11/16	86.8

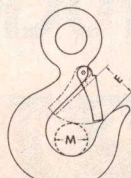
HOOK LATCH KITS

Individually packaged with complete assembly instructions.



HOOK LATCHES

Rugged latches have powerful, non-corrosive snap springs to restrain sling from being jarred from the hook. Latches are sufficiently large to allow operator ample gripping area so that fingers will not be exposed to the load-carrying line.

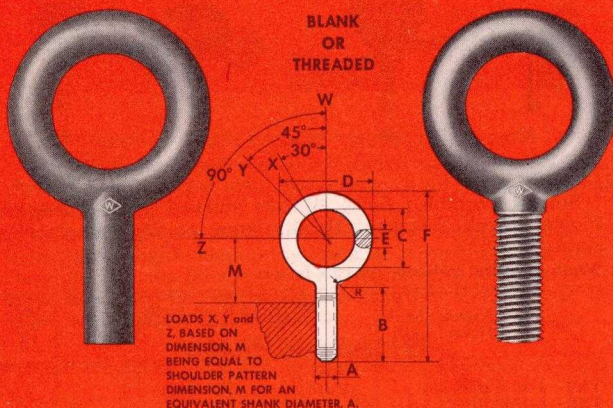


Kit No.	To Fit Nos.	Kit No.	To Fit Nos.
HSL-2-22	HH-2, HH-22	HSL-10-30	HH-10, HH-30
HSL-3-23	HH-3, HH-23	HSL-11-31	HH-11, HH-31
HSL-4-24	HH-4, HH-24	HSL-12-32	HH-12, HH-32
HSL-5-25	HH-5, HH-25	HSL-13-33	HH-13, HH-33
HSL-6-26	HH-6, HH-26	HSL-14-34	HH-14, HH-34
HSL-7-27	HH-7, HH-27	HSL-15-35	HH-15, HH-15-A, HH-35, HH-35-A
HSL-8-28	HH-8, HH-28	HSL-16-36	HH-16, HH-16-A, HH-36, HH-36-A
HSL-9-29	HH-9, HH-29	HSL-17	HH-17, HH-17A

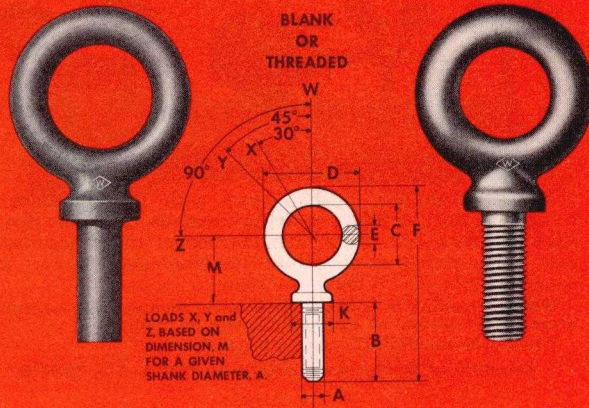


DROP-FORGED EYE BOLTS—CARBON STEEL-WELDLESS

VULCAN® PLAIN PATTERN



VULCAN® SHOULDER PATTERN



Forged from special quality, fine grain carbon steel, quenched and tempered to BHN 187-220 for the best combination of strength and toughness. Each lot is tested and inspected to insure conformance with specifications. Unified Coarse (UNC) Class 2A Threaded Eye Bolts of Standard Length are in stock in all sizes; threaded prices are for UNC Class 2A Threads; longer lengths and special threads extra. Eye Bolts of special materials or lengths made to order.

When ordering, please state whether Threaded or Blank is desired; Threaded will be supplied, unless otherwise specified.

Example of Order Nomenclature: "EB-5 EYE BOLT BLANK, EB-23 EYE BOLT THREADED"

* When load application is in direction of axis of shank.

** The many variables that arise from angular loading; such as sling application, extent to which eyebolt is threaded into hole, etc., prohibit the use of this chart for specific conditions. The given loads are a guide, with no guarantee of actual performance. Use of a Safety Factor of 5 is recommended.

Mechanical Properties

Tensile Strength	75,000 psi min.
Yield Strength	50,000 psi min.
Elongation	25% min.
Reduction of Area	50% min.

MILITARY DESCRIPTION: PLAIN AND SHOULDER PATTERN — ANS B18.15-1969; SHOULDER PATTERN ONLY — MS-51937

No.	Nom. Shank Diam.	Length of Shank B		Eye I.D.	Eye O.D.	Eye Sect. Diam.	Overall Length	Shoulder Diam.	Thread UNC- 2A	Capacity * Pounds			Guide For Angular Loading—Pounds ** To be used as a guide only.						Wgt. Ea., Lbs.							
		A	Std. Lgth.							Special Lgth. Up To	C	D	E	F	K	Working Load W		Breaking Strain Approx.		X-30°		Y-45°		Z-90°		
																Safety Factor	Of 4			Of 5	Safety Factor	Of 4	Of 5	Safety Factor	Of 4	Of 5
PLAIN PATTERN																										
EB-1	1/4	1	.....	3/4	1-3/16	7/32	2-3/16	.....	1/4-20	625	500	2,500	180	150	125	100	90	75	.05					
EB-2	5/16	1-1/8	.....	7/8	1-7/16	9/32	2-9/16	.....	5/16-18	1,125	900	4,500	330	270	225	180	170	135	.09					
EB-3	3/8	1-1/4	12	1	1-21/32	21/64	2-29/32	.....	3/8-16	1,625	1,300	6,500	490	390	325	260	240	195	.18						
EB-4	7/16	1-3/8	12	1-3/32	1-27/32	3/8	3-7/32	.....	7/16-14	2,250	1,800	9,000	670	540	450	360	340	270	.26						
EB-5	1/2	1-1/2	12	1-3/16	2-1/16	7/16	3-9/16	.....	1/2-13	3,000	2,400	12,000	900	720	600	480	450	360	.35						
EB-6	9/16	1-5/8	12	1-9/32	2-9/32	1/2	3-29/32	.....	9/16-12	3,750	3,000	15,000	1,100	900	750	600	560	450	.53						
EB-7	5/8	1-3/4	12	1-3/8	2-1/2	9/16	4-1/4	.....	5/8-11	5,000	4,000	20,000	1,500	1,200	1,000	800	750	600	.72						
EB-8	3/4	2	12	1-1/2	2-13/16	21/32	4-13/16	.....	3/4-10	6,250	5,000	25,000	1,850	1,500	1,250	1,000	930	750	1.2						
EB-9	7/8	2-1/4	12	1-11/16	3-1/4	25/32	5-1/2	.....	7/8-9	8,750	7,000	35,000	2,600	2,100	1,750	1,400	1,300	1,050	1.6						
EB-10	1	2-1/2	12	1-13/16	3-9/16	7/8	6-1/16	.....	1-8	11,250	9,000	45,000	3,400	2,700	2,250	1,800	1,700	1,350	2.2						
EB-11	1-1/8	2-3/4	12	2	4	1	6-3/4	.....	1-1/8-7	15,000	12,000	60,000	4,500	3,600	3,000	2,400	2,250	1,800	3.2						
EB-12	1-1/4	3	12	2-3/16	4-7/16	1-1/8	7-7/16	.....	1-1/4-7	18,750	15,000	75,000	5,600	4,500	3,750	3,000	2,800	2,250	4.5						
EB-14	1-1/2	3-1/2	18	2-1/2	5-3/16	1-11/32	8-11/16	.....	1-1/2-6	26,250	21,000	105,000	7,900	6,300	5,250	4,200	3,900	3,150	7.2						
EB-15	1-3/4	3-3/4	18	2-7/8	6-1/16	1-19/32	9-13/16	.....	1-3/4-5	35,000	28,000	140,000	10,500	7,400	7,000	5,600	5,200	4,200	11.6						
EB-16	2	4	18	3-1/4	6-7/8	1-13/16	10-7/8	.....	2-4-1/2	47,500	38,000	190,000	14,200	11,400	9,500	7,600	7,100	5,700	16.1						
EB-17	2-1/2	5	12	4	8-9/16	2-9/32	13-9/16	.....	2-1/2-4	70,000	56,000	280,000	21,000	16,800	14,000	11,200	10,500	8,400	33.						
SHOULDER PATTERN																										
On standard length Threaded Eye Bolts the thread runs within 7/32" (EB-21) to 5/8" (EB-36) of shoulder, which is faced.																										
EB-21	1/4	1	12	3/4	1-3/16	7/32	2-13/32	15/32	1/4-20	625	500	2,500	220	175	150	125	125	100	.05							
EB-22	5/16	1-1/8	12	7/8	1-7/16	9/32	2-13/16	19/32	5/16-18	1,125	900	4,500	390	310	280	225	225	180	.11							
EB-23	3/8	1-1/4	12	1	1-21/32	21/64	3-15/64	11/16	3/8-16	1,625	1,300	6,500	570	450	400	325	325	260	.21							
EB-24	7/16	1-3/8	12	1-3/32	1-27/32	3/8	3-39/64	25/32	7/16-14	2,250	1,800	9,000	790	630	560	450	450	360	.28							
EB-25	1/2	1-1/2	12	1-3/16	2-1/16	7/16	3-31/32	7/8	1/2-13	3,000	2,400	12,000	1,050	840	750	600	600	480	.43							
EB-26	9/16	1-5/8	12	1-9/32	2-9/32	1/2	4-23/64	31/32	9/16-12	3,750	3,000	15,000	1,300	1,050	930	750	750	600	.58							
EB-27	5/8	1-3/4	12	1-3/8	2-1/2	9/16	4-23/32	1-1/16	5/8-11	5,000	4,000	20,000	1,750	1,400	1,250	1,000	1,000	800	.77							
EB-28	3/4	2	12	1-1/2	2-13/16	21/32	5-5/16	1-1/4	3/4-10	6,250	5,000	25,000	2,200	1,750	1,550	1,250	1,250	1,000	1.2							
EB-29	7/8	2-1/4	12	1-11/16	3-1/4	25/32	6-1/16	1-7/16	7/8-9	8,750	7,000	35,000	3,000	2,450	2,200	1,750	1,750	1,400	1.9							
EB-30	1	2-1/2	18	1-13/16	3-9/16	7/8	6-11/16	1-9/16	1-8	11,250	9,000	45,000	3,900	3,150	2,800	2,250	2,250	1,800	2.6							
EB-31	1-1/8	2-3/4	18	2	4	1	7-15/32	1-11/16	1-1/8-7	15,000	12,000	60,000	5,200	4,200	3,750	3,000	3,000	2,400	3.7							
EB-32	1-1/4	3	18	2-3/16	4-7/16	1-1/8	8-5/32	1-7/8	1-1/4-7	18,750	15,000	75,000	6,500	5,200	4,700	3,750	3,750	3,000	4.9							
EB-34	1-1/2	3-1/2	18	2-1/2	5-3/16	1-11/32	9-17/32	2-3/16	1-1/2-6	26,250	21,000	105,000	9,100	7,300	6,500	5,250	5,250	4,200	8.							
EB-35	1-3/4	3-3/4	18	2-7/8	6-1/16	1-19/32	10-11/16	2-1/2	1-3/4-5	35,000	28,000	140,000	12,000	9,800	8,700	7,000	7,000	5,600	13.3							
EB-36	2	4	18	3-1/4	6-7/8	1-13/16	11-15/16	2-7/8	2-4-1/2	47,500	38,000	190,000	16,500	13,000	12,000	9,500	9,500	7,600	19.2							



DROP-FORGED THUMB SCREWS

THREADED



Smooth, tumbled finish. Screws with Unified Class 2A threads in stock in all sizes, **other threads to order**. Special sizes and shapes to order. Lengths, longer than those listed, can be furnished special from available dies. Screws with special points can be made to order.

When threading is ordered, Class 2A is furnished. If additional accuracy is required an extra charge will be made.

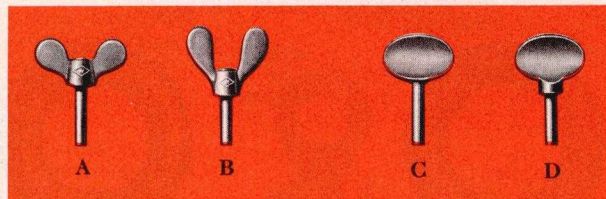
When ordering indicate type by letter

Example of Order Nomenclature: "TST-5-3 1/2 TYPE D"

**MILITARY DESCRIPTION: FF-T-305A, TYPE I, (J.H.W. TYPE D)
FF-T-305A, TYPE II, (J.H.W. TYPE C)**

Number	Diam. of Screw and Threads Per Inch	Lgth. Under Head	Width of Head Of Type in Stock				Wgt. Per 100
			A	B	C	D	
TST-3-1/2	10-24	1/2	15/16	1	27/32	27/32	5.5
TST-3-3/4	10-24	3/4	15/16	1	27/32	27/32	5.9
TST-3-1	10-24	1	15/16	1	27/32	27/32	6.4
TST-3-1 1/4	10-24	1-1/4	15/16	1	27/32	27/32	6.8
TST-3-1 1/2	10-24	1-1/2	15/16	1	27/32	27/32	6.9
TST-3-2	10-24	2	15/16	1	27/32	27/32	7.6
TST-4-1/2	1 1/4-20	1/2	1-1/8	1-3/16	1	1	5.5
TST-4-3/4	1 1/4-20	3/4	1-1/8	1-3/16	1	1	5.9
TST-4-1	1 1/4-20	1	1-1/8	1-3/16	1	1	6.4
TST-4-1 1/4	1 1/4-20	1-1/4	1-1/8	1-3/16	1	1	6.8
TST-4-1 1/2	1 1/4-20	1-1/2	1-1/8	1-3/16	1	1	6.9
TST-4-2	1 1/4-20	2	1-1/8	1-3/16	1	1	7.6
TST-4-2 1/2	1 1/4-20	2-1/2	1-1/8	1-3/16	1	1	8.4
TST-4-3	1 1/4-20	3	1-1/8	1-3/16	1	1	9.5
TST-5-1/2	5/16-18	1/2	1-7/16	1-3/8	1-3/16	1-3/16	5.5
TST-5-3/4	5/16-18	3/4	1-7/16	1-3/8	1-3/16	1-3/16	5.9
TST-5-1	5/16-18	1	1-7/16	1-3/8	1-3/16	1-3/16	6.4
TST-5-1 1/4	5/16-18	1-1/4	1-7/16	1-3/8	1-3/16	1-3/16	6.8
TST-5-1 1/2	5/16-18	1-1/2	1-7/16	1-3/8	1-3/16	1-3/16	6.9
TST-5-2	5/16-18	2	1-7/16	1-3/8	1-3/16	1-3/16	7.6
TST-5-2 1/2	5/16-18	2-1/2	1-7/16	1-3/8	1-3/16	1-3/16	8.4
TST-5-3	5/16-18	3	1-7/16	1-3/8	1-3/16	1-3/16	9.5
TST-5-3 1/2	5/16-18	3-1/2	1-7/16	1-3/8	1-3/16	1-3/16	10.
TST-5-4	5/16-18	4	1-7/16	1-3/8	1-3/16	1-3/16	10.9
TST-6-1/2	3/8-16	1/2	1-11/16	1-5/8	1-3/8	1-3/8	5.5
TST-6-3/4	3/8-16	3/4	1-11/16	1-5/8	1-3/8	1-3/8	5.9
TST-6-1	3/8-16	1	1-11/16	1-5/8	1-3/8	1-3/8	6.4
TST-6-1 1/4	3/8-16	1-1/4	1-11/16	1-5/8	1-3/8	1-3/8	6.8
TST-6-1 1/2	3/8-16	1-1/2	1-11/16	1-5/8	1-3/8	1-3/8	6.9
TST-6-2	3/8-16	2	1-11/16	1-5/8	1-3/8	1-3/8	7.6
TST-6-2 1/2	3/8-16	2-1/2	1-11/16	1-5/8	1-3/8	1-3/8	8.4
TST-6-3	3/8-16	3	1-11/16	1-5/8	1-3/8	1-3/8	9.5
TST-6-3 1/2	3/8-16	3-1/2	1-11/16	1-5/8	1-3/8	1-3/8	10.
TST-6-4	3/8-16	4	1-11/16	1-5/8	1-3/8	1-3/8	10.9
TST-7-1	7/16-14	1	2	1-9/16	1-9/16	1-9/16	6.4
TST-7-1 1/4	7/16-14	1-1/4	2	1-9/16	1-9/16	1-9/16	6.8
TST-7-1 1/2	7/16-14	1-1/2	2	1-9/16	1-9/16	1-9/16	6.9
TST-7-2	7/16-14	2	2	1-9/16	1-9/16	1-9/16	7.6
TST-7-2 1/2	7/16-14	2-1/2	2	1-9/16	1-9/16	1-9/16	8.4
TST-7-3	7/16-14	3	2	1-9/16	1-9/16	1-9/16	9.5
TST-7-3 1/2	7/16-14	3-1/2	2	1-9/16	1-9/16	1-9/16	10.
TST-8-1	1/2-13	1	2-1/4	1-3/4	1-3/4	1-3/4	6.4
TST-8-1 1/4	1/2-13	1-1/4	2-1/4	1-3/4	1-3/4	1-3/4	6.8
TST-8-1 1/2	1/2-13	1-1/2	2-1/4	1-3/4	1-3/4	1-3/4	6.9
TST-8-2	1/2-13	2	2-1/4	1-3/4	1-3/4	1-3/4	7.6
TST-8-2 1/2	1/2-13	2-1/2	2-1/4	1-3/4	1-3/4	1-3/4	8.4
TST-8-3	1/2-13	3	2-1/4	1-3/4	1-3/4	1-3/4	9.5
TST-10-1	5/8-11	1	2-3/4	1-3/4	1-3/4	1-3/4	6.4
TST-10-1 1/2	5/8-11	1-1/2	2-3/4	1-3/4	1-3/4	1-3/4	6.9
TST-10-2	5/8-11	2	2-3/4	1-3/4	1-3/4	1-3/4	7.6
TST-10-2 1/2	5/8-11	2-1/2	2-3/4	1-3/4	1-3/4	1-3/4	8.4

BLANK

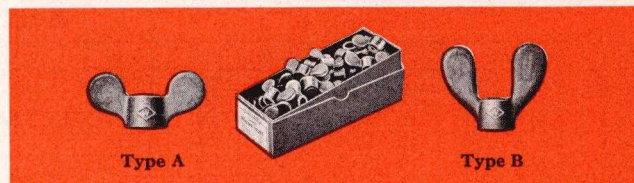


Smooth, tumbled finish. Blanks stocked only in lengths shown. Check Width of Head column to determine styles stocked.

When ordering indicate type by letter.

Number	Shank Diam.	Shank Lgth.	Width of Head by Type				Wt. per 10
			A	B	C	D	
TSB- 3-1	3/16	1	15/16	1	27/32	27/32	6.4
TSB- 3-1 1/4	3/16	1-1/4	15/16	1	27/32	27/32	6.8
TSB- 3-2	3/16	2	15/16	1	27/32	27/32	7.6
TSB- 4- 1/2	1/4	1/2	1- 1/8	1	1	1	5.5
TSB- 4- 3/4	1/4	3/4	1- 1/8	1	1	1	5.9
TSB- 4-1	1/4	1	1- 1/8	1	1	1	6.4
TSB- 4-1 1/4	1/4	1-1/4	1- 1/8	1	1	1	6.8
TSB- 4-2	1/4	2	1- 1/8	1	1	1	7.6
TSB- 4-3	1/4	3	1- 1/8	1	1	1	9.5
TSB- 5-1	5/16	1	1- 7/16	1-3/8	1- 3/16	1- 3/16	6.4
TSB- 5-1 1/4	5/16	1-1/4	1- 7/16	1-3/8	1- 3/16	1- 3/16	6.8
TSB- 5-1 1/2	5/16	1-1/2	1- 7/16	1-3/8	1- 3/16	1- 3/16	6.9
TSB- 5-2	5/16	2	1- 7/16	1-3/8	1- 3/16	1- 3/16	7.6
TSB- 5-3	5/16	3	1- 7/16	1-3/8	1- 3/16	1- 3/16	9.5
TSB- 5-4	5/16	4	1- 7/16	1-3/8	1- 3/16	1- 3/16	10.9
TSB- 6-1	3/8	1	1-11/16	1-5/8	1- 3/8	1- 3/8	6.4
TSB- 6-1 1/2	3/8	1-1/2	1-11/16	1-5/8	1- 3/8	1- 3/8	6.9
TSB- 6-2	3/8	2	1-11/16	1-5/8	1- 3/8	1- 3/8	7.6
TSB- 6-3	3/8	3	1-11/16	1-5/8	1- 3/8	1- 3/8	9.5
TSB- 6-4	3/8	4	1-11/16	1-5/8	1- 3/8	1- 3/8	10.9
TSB- 7-2 1/2	7/16	2-1/2	2	1-9/16	1-9/16	1-9/16	8.4
TSB- 7-3	7/16	3	2	1-9/16	1-9/16	1-9/16	9.5
TSB- 7-3 1/2	7/16	3-1/2	2	1-9/16	1-9/16	1-9/16	10.
TSB- 8-2	1/2	2	2- 1/4	1-3/4	1-3/4	1-3/4	7.6
TSB- 8-3	1/2	3	2- 1/4	1-3/4	1-3/4	1-3/4	9.5
TSB-10-2	5/8	2	2- 3/4	1-3/4	1-3/4	1-3/4	7.6
TSB-10-2 1/2	5/8	2-1/2	2- 3/4	1-3/4	1-3/4	1-3/4	8.4

DROP-FORGED THUMB NUTS



Furnished either Blank or Tapped, tumbled smooth. Nuts tapped Unified Class 2B threads in stock in all sizes. **Other threads to order**. Unless otherwise specified, orders for Tapped Nuts will be supplied with Unified Class 2B threads. Tapped Nuts have base faced at right angle to hole. Special sizes and shapes to order.

When tapping is ordered, Class 2B is furnished. If additional accuracy is required an extra charge will be made.

**MILITARY DESCRIPTION: FF-N-845B, TYPE III, STYLE A, (J.H.W. TYPE A)
FF-N-845B, TYPE III, STYLE B, (J.H.W. TYPE B)**

Number				For Bolt Size and Threads Per In.	Width Across Wings		Diam. Top of Barrel	Wgt. Per 100
Type A		Type B			Type A	Type B		
Blank	Tapped	Blank	Tapped					
TNA-1/8	TNAT-1/8	.....	.....	5-40	3/4	.....	1/4	.62
TNA-3/16	TNAT-3/16	TNB-3/16	TNBT-3/16	10-24	15/16	1	5/16	1.3
TNA-1/4	TNAT-1/4	TNB-1/4	TNBT-1/4	1/4-20	1-1/8	1-3/16	3/8	2.3
TNA-5/16	TNAT-5/16	TNB-5/16	TNBT-5/16	5/16-18	1-7/16	1-3/8	7/16	4.
TNA-3/8	TNAT-3/8	TNB-3/8	TNBT-3/8	3/8-16	1-11/16	1-5/8	17/32	6.2
TNA-7/16	TNAT-7/16	TNB-7/16	TNBT-7/16	7/16-14	2	1-7/8	5/8	9.1
TNA-1/2	TNAT-1/2	TNB-1/2	TNBT-1/2	1/2-13	2-1/4	2-1/16	21/32	12.7
TNA-9/16	TNAT-9/16	TNB-9/16	TNBT-9/16	9/16-12	2-9/16	2-3/8	3/4	16.2
TNA-5/8	TNAT-5/8	TNB-5/8	TNBT-5/8	5/8-11	2-3/4	2-9/16	13/16	22.5
TNA-3/4	TNAT-3/4	TNB-3/4	TNBT-3/4	3/4-10	3-1/4	3	15/16	37.

DROP-FORGED HANDLES



Unfinished are plain forgings without hole in hub.

Finished are broached, counterbored in free end of hub, ground with polished grip, case-hardened all over, industrial gray finish.

Broached openings have corners slightly rounded to prevent breakage, a slight clearance is provided. Openings other than standard and special sizes, can be broached to order at extra cost. Hubs can be cut to shorter lengths. Handles can be offset at an additional charge.

BALANCE HANDLES

Number		Length			Hub		Sq. Hole, Size Broached		Ball Dia.	Wgt. Ea., Lbs.
Un-Finished	Finished	C Hub to C Hdle.	Ex-treme	Hdle. Above Arm	Dia.	Lgth.	Std. in Stock	Max. to Spec. Order		
BH-512	BH-512-2	1-1/4	3-5/16	1-15/16	7/8	3/4	7/16	1/2	7/8	.25
BH-516	BH-516-2	1-5/8	4	2-1/4	7/8	7/8	7/16	1/2	1-1/4	.56
BH-520	BH-520-2	2	5	2-5/8	1	15/16	1/2	5/8	1-1/4	.75
BH-522	BH-522-2	2-1/4	5-1/2	2-3/4	1-1/4	1	1/2	13/16	1-3/8	1.1
BH-525	BH-525-2	2-1/2	6	2-13/16	1-1/4	1-1/8	5/8	13/16	1-7/16	1.3
BH-529	BH-529-2	2-7/8	7	3-5/16	1-1/4	1-1/4	5/8	13/16	1-1/2	1.6
BH-434	BH-434-2	3-3/8	8	3-7/16	1-1/2	7/8	5/8	3/4	1-3/4	1.3
BH-439	BH-439-2	3-7/8	9	3-1/2	1-5/8	1-1/16	5/8	3/4	1-3/4	2.8

†Handle cone-shaped: see Crank Handle illustration above.

†Hub is a sphere, flattened on top and bottom; full size drawing on request

CRANK HANDLES

Number			Length			Hub		Sq. Hole, Size Broached		Wgt. Ea., Lbs.
			C Hub to C Hdle.	Ex-treme	Hdle. Above Arm			Std. in Stock	Max. to Spec. Order	
Un-Finished	Broached *	Finished				Dia.	Lgth.			
CH-00	CH-00-1	CH-00-2	1-3/4	2-5/8	2-3/8	1	1-1/4	1/2	5/8	.38
CH-0	CH-0-1	CH-0-2	2-1/4	3-1/8	2-1/2	1	1-1/4	1/2	5/8	.48
CH-1	CH-1-1	CH-1-2	3	4	2-3/4	1-1/4	1-1/2	9/16	13/16	.73
CH-2	CH-2-1	CH-2-2	3-1/2	4-1/2	2-7/8	1-1/16	1-5/16	1/2	5/8	.75
CH-4	CH-4-1	CH-4-2	4	5-1/8	3-1/8	1-1/4	1-3/8	9/16	13/16	1.
CH-6	CH-6-1	CH-6-2	5	6-1/8	3-1/8	1-1/4	1-13/16	5/8	13/16	1.1
CH-8	CH-8-1	CH-8-2	6	7-1/8	3-1/8	1-1/4	1-15/16	11/16	13/16	1.2
CH-10	CH-10-1	CH-10-2	7	8-1/4	3-3/8	1-3/8	2-1/16	3/4	7/8	1.6
CH-12	CH-12-1	CH-12-2	8	9-3/8	3-5/8	1-9/16	2-7/16	7/8	1	2.4
CH-14	CH-14-1	CH-14-2	9-1/8	10-1/2	3-3/4	1-1/2	2-1/2	7/8	1	2.5
CH-16	CH-16-1	CH-16-2	10	11-1/2	4	1-3/4	3	1	1-1/8	3.2

*Broached have holes finished and hubs recessed or counterbored in free end, but are otherwise plain forgings.

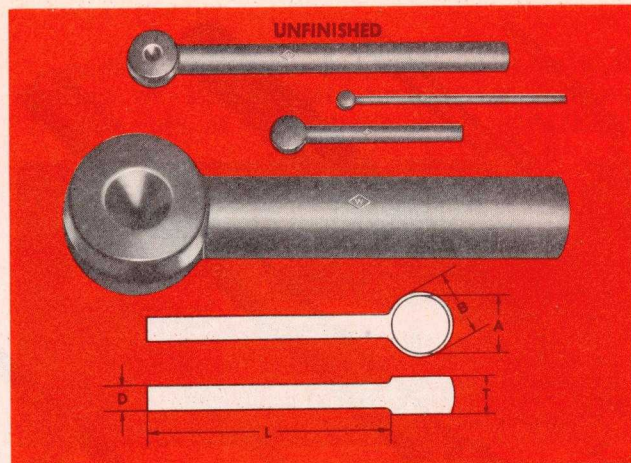
DROP-FORGED MACHINE HANDLES

UNFINISHED WITH SMOOTH SURFACE



No.	Extreme Length	Standard Lgth. Shank	Diameter, Shank	Weight Each, Lbs.
BALL PATTERN				
MH-2	3-1/4	3/4	15/32	.22
MH-3	3-7/8	7/8	15/32	.31
MH-4	4-1/2	1	17/32	.37
MH-5	5-1/8	1-1/8	19/32	.62
MH-6	5-7/8	1-1/4	11/16	1.3
CONE PATTERN				
MH-11	3-1/2	1/2	3/8	.22
MH-13	4-1/2	3/4	7/16	.43
MH-15	5-1/2	7/8	1/2	.75

DROP-FORGED ROD ENDS



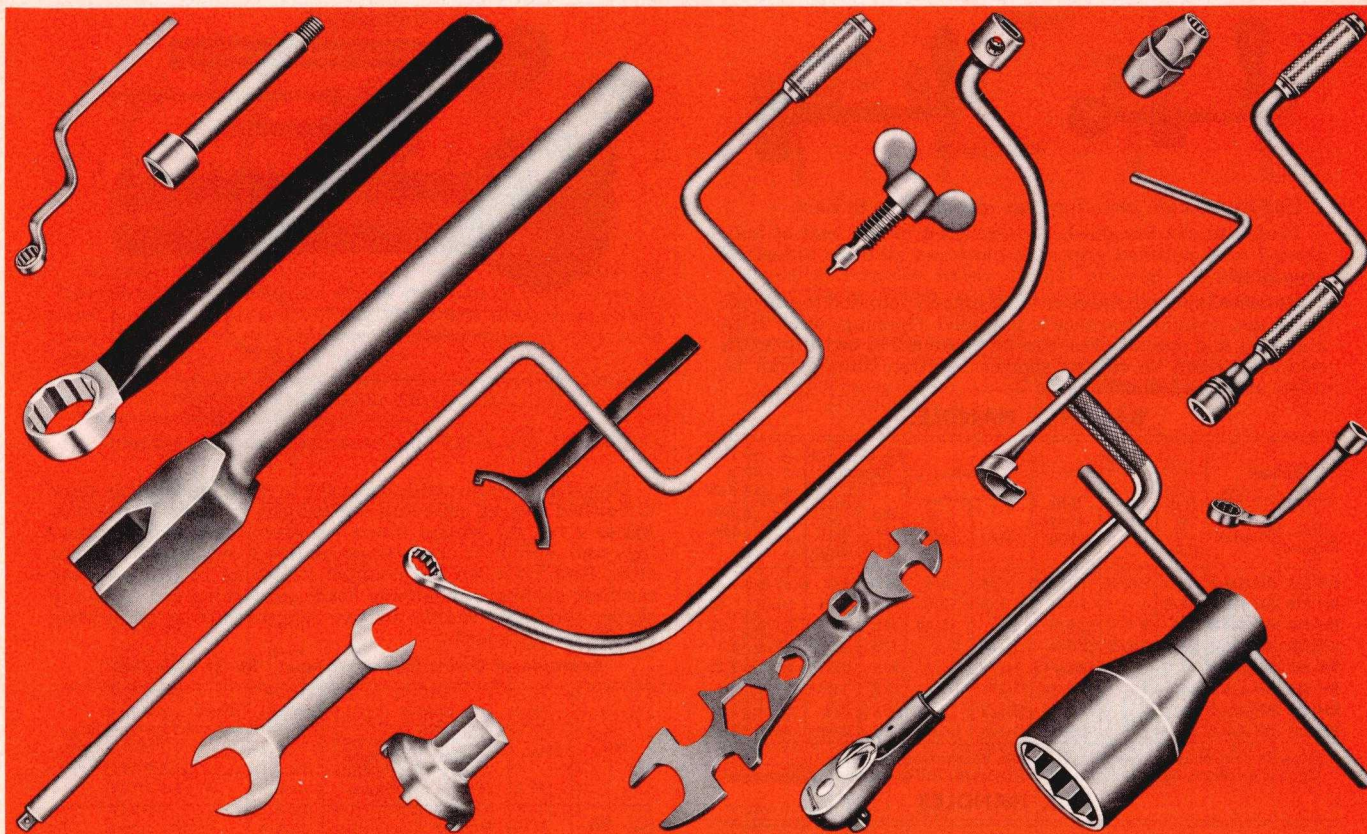
Drop-forged from mild steel, easy to weld. Dimensions show unfinished forging sizes and are subject to slight variations. Prices given for special forms on receipt of models or drawings and specifications stating quantity required. Williams stock Rod Ends can be modified according to the following services; drilling and tapping heads, broaching heads to any shape, threading shanks to any length, cutting or welding shanks to any length.

Example of Order Nomenclature: "RE-3J ROD END"

No.	Shank			Head		Thick-ness	Wgt. Each, Lbs.
	Dia. D	Std. Length under Head L	Special Length Available Up to	A	B		
RE-0B	3/16	4-13/16	.....	3/8	7/16	1/4	.06
RE-1C	1/4	5	9	5/8	11/16	1/4	.10
RE-1D	1/4	2- 3/8	9	7/16	1/2	1/4	.05
RE-2A	5/16	3- 3/4	9	3/4	53/64	7/16	.16
RE-2B	5/16	3- 1/8	.....	3/4	53/64	5/16	.13
RE-2C	5/16	5- 3/4	.....	3/4	13/16	3/8	.19
RE-2D	5/16	1- 1/4	.....	13/16	57/64	3/8	.10
RE-3A	3/8	2	9	1	1- 1/16	3/8	.16
RE-3C	3/8	3- 1/2	9	13/16	57/64	3/8	.19
RE-3E	3/8	3- 1/8	.....	5/8	23/32	5/8	.19
RE-3F	3/8	1- 1/8	.....	3/4	53/64	3/8	.10
RE-3G	3/8	1- 7/16	.....	5/8	45/64	3/8	.09
RE-3H	3/8	1- 5/8	.....	3/4	13/16	3/8	.11
RE-3J	3/8	3- 1/16	.....	7/8	31/32	3/8	.17
RE-4B	7/16	4- 1/2	9	15/16	1- 1/32	5/8	.35
RE-5A	1/2	4- 3/8	15	1	1- 1/4	1/2	.35
RE-5C	1/2	3- 1/16	.....	7/8	61/64	7/16	.27
RE-5D	1/2	2- 7/8	12	3/4	1- 1/8	13/16	.36
RE-5E	1/2	2- 1/8	12	1- 1/16	1- 7/32	9/16	.31
RE-5F	1/2	2- 1/16	.....	13/16	59/64	11/32	.19
RE-7A	5/8	2- 3/8	18	1- 1/8	1-13/64	15/32	.35
RE-7B	5/8	4- 7/8	18	1- 1/4	1-11/32	19/32	.69
RE-7D	5/8	7- 1/2	18	1- 5/32	1- 1/4	21/32	.92
RE-7E	5/8	5- 7/8	9	1- 1/8	1- 9/16	1-1/16	1.
RE-7F	5/8	4- 1/2	18	1- 7/16	1-17/32	11/16	.77
RE-7G	5/8	2- 5/16	.....	1	1- 1/8	7/16	.34
RE-9A	3/4	3- 7/8	9	1- 3/4	1-27/32	5/8	1.
RE-9B	3/4	4	15	1- 1/2	1- 5/8	13/16	1.
RE-9C	3/4	4- 3/8	20	1- 1/8	1-15/64	3/4	.88
RE-11A	7/8	3- 1/2	15	1- 1/2	1- 5/8	1-1/16	1.3
RE-11B	7/8	4	18	2	2- 1/8	15/16	1.6
RE-13B	1	3- 1/2	9	1- 5/8	1-51/64	1-1/2	1.9
RE-13C	1	3- 1/2	18	1-15/32	1-19/32	1-1/8	1.5
RE-14A	1-1/16	5- 3/4	18	2- 1/16	2- 7/32	1-1/8	2.8
RE-15B	1-1/8	6	18	2- 1/4	2- 7/16	1-1/4	3.3
RE-17A	1-1/4	6	24	2- 5/16	2-17/32	1-1/2	4.1



SPECIAL and MODIFIED WRENCHES and TOOLS



THOUSANDS OF TOOLS AVAILABLE FOR ADAPTATION

When special tools are required, it is not always necessary to start from "scratch." The Williams line offers thousands of standard wrenches and hand tools that lend themselves to modification or adaptation.

Stock components, such as speeder handles, ratchet heads, sockets and wrench heads can often be combined with such special services as bending or welding to produce exactly the tool required.

Should your problem require it, we can furnish engineering and product development assistance plus the services and facilities of a well equipped metallurgical laboratory. More specialized tools can readily be designed.

In submitting a sketch or drawing for quotation, it is often helpful to include a photograph showing the clearance and obstruction conditions surrounding the area in which the tool is to be used.

WILLIAMS IMPACT EXTRUDED SOCKETS

A NEW HIGH STANDARD OF ACCURACY AND QUALITY IN SOCKET MANUFACTURE

Williams highly developed cold impact extrusion imparts all the quality characteristics of a precision-forged tool to further improve the superior design of Williams sockets. All popular sizes of Supersockets in 3/8, 1/2, 3/4, and 1 inch drives are now being manufactured by the extrusion method.

Extremely close tolerances, improved concentricity and great strength team up to provide new standards for socket performance.

STEP BY STEP, NEW QUALITY IS BUILT INTO WILLIAMS SOCKETS



Selected alloy steel bar stock cut to proper length.



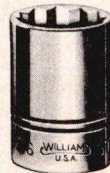
Preforming operation sizes slug to required O.D. Slug is then coated with special lubricant.



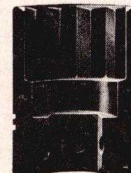
Double-hex punch forms concentric nut opening in one impacting operation.



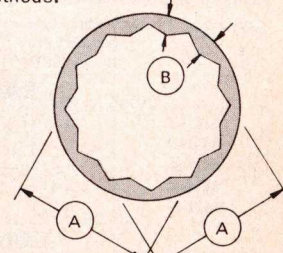
Square punch forms drive opening in other end, giving socket final size and shape.



Finishing operations, including durable nickel-chrome plating, complete manufacture.



Cross section of new impact extruded socket. Note clean lines and lack of any undercut for displacement of metal.



Tolerances across flats (A) are held to U.S.A. Standards Institute standards. Concentricity of thin wall section (B) can be held to tolerances far more critical than sockets formed by most other methods.

PROPER SELECTION AND SAFE USE OF HAND TOOLS

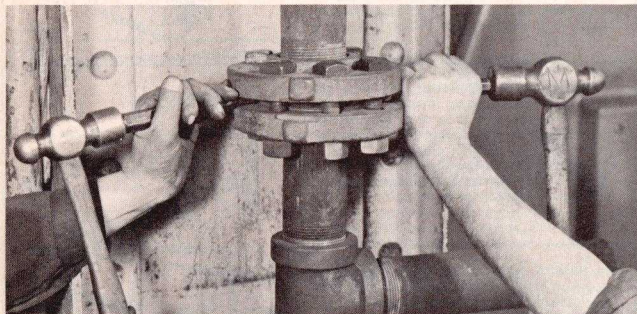
REGARDLESS of the size of an operation, lack of an adequate assortment of hand tools for any maintenance, installation, or construction job can lead to unnecessary and unwarranted expense.

First, lack of proper tools for a job leads to improvising and misapplication of the tools at hand. Then costly abuse, excessive wear, and premature tool failure inevitably follow. Not only will the cost of worn and broken tools be exceedingly high, but the additional time spent accomplishing the task and the accompanying increased and costly accident rate will far exceed the cost of providing and maintaining an adequate hand-tool inventory.

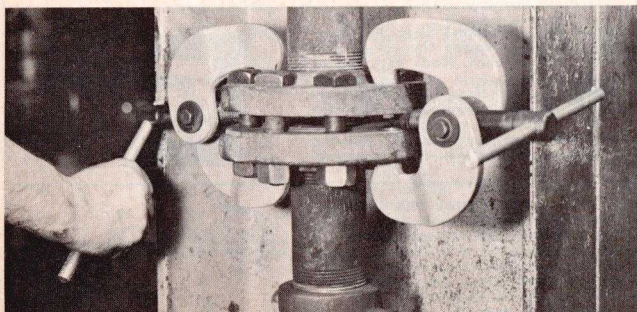
Four major factors enter into cost reduction in hand-tool investment. They are: (1) careful selection and top quality, (2) adequate range of sizes and styles, (3) correct use and (4) proper care.

Careful selection. While price is important in the selection of any product, value—true value—is the real determining factor. Generally, the best-quality hand tool is the least costly in the long run. It is rare indeed that “cheap tools” ever deliver real value. Top-quality tools forestall breakage, excessive wear, and premature failure, all of which result in lost time and high accident rates.

Another important factor in careful selection is buying the right tool for the job. Flange-jacks (Fig. 2) are a good example of tools designed especially for a particular job—that of replacing the gasket in pipe flanges. The old method was risky and time-consuming.



WITHOUT FLANGE JACKS gasket replacement is a difficult and dangerous task. Fig. 1.



WITH SPECIALLY DESIGNED tools like these flange jacks for special jobs, safety is enhanced. Fig. 2.

Another example of specialized tools is the slugging or striking-face wrench for loosening “frozen” nuts, or setting fasteners up tight. (Fig. 4)



HIGH on the list of hand-tool accidents and tool breakage is the use of pipe to increase leverage. Fig. 3.



STRIKING-FACE WRENCHES safely remove “frozen” nuts, or set fasteners up tight. Fig. 4.

It is important that tool buyers and users study the latest tool catalogs so that they will know the work-saving and safety features of all the specialized types of tools available today.

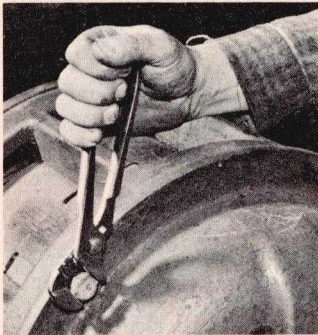
Adequate range. In selecting wrenches, a study should be made of the range of nut and bolt sizes encountered on the various jobs. Thought should also be given to any clearance or accessibility problems that may exist. As an example, in choosing combination open-end box wrenches, it might be well to provide both the long and short series in the required range of openings. It may be that the shorter length, in many cases, will overcome accessibility problems. In others, the additional leverage offered in the long series may be of prime importance. Page 118 shows a number of examples of clearance and other wrench features.

Detachable sockets and their various drive components make it possible for the operator or mechanic to practically “tailor-make” wrenches to fit the job. Page 120 illustrates and describes the use of many socket and driver types.

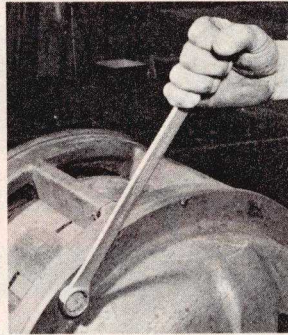
In addition, the proper organization of tools in sets saves mechanic's time by eliminating needless lost time involved in getting forgotten tools or substituting for lack of proper tool assortment. There is no chance of the mechanic being a “hip-pocket” operator, when an adequate range of tools is readily available.

PROPER SELECTION AND SAFE USE OF HAND TOOLS

Correct use. The assumption that everybody knows how to use the more common wrenches and hand tools is not borne out by accident records. Wrenches that are "pushed" instead of "pulled," screwdrivers that are used as levers or pry-bars, and pliers used as a substitute for wrenches (Fig. 5) are just a fraction of the long list of improper uses that appear on accident reports.



ROUNDED corners inevitably follow when pliers are used on nut or bolt heads. Fig. 5.



BOX TYPE of wrenches on nut and bolt heads give firm grip and safe, strong leverage. Fig. 6.

A continuing educational program in the correct and safe use of wrenches and tools is essential to hand-tool economy and safe working habits. Such a program should begin with instructions that give the worker a thorough understanding of the purpose and limitations of each tool. He must be made to realize that a tool, like his fingers, is an extension of his hand. The use and care of these tools are the basis of his skill and trade.

Proper care. Keeping tools clean, properly lubricated, and in a good state of repair is essential to hand-tool economy. To promote proper tool care, good housekeeping should be encouraged. One of the best ways to assure good housekeeping is to see that adequate tool boxes, chests, and cabinets are provided for all types of work.

For small jobs to be done away from the work bench out on location, use tool boxes that can be easily carried yet provide space and compartments to keep tools in an orderly fashion. For larger jobs, mobile cabinets should be provided, cabinets that can be easily "wheeled" to the job. This encourages the use of correct tools for the job by making it easy to have an adequate selection of tools right at hand.

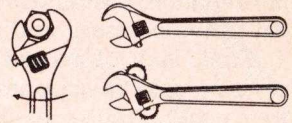
Having the right tool at the right time can best be assured by organizing tools in sets. This should be done by studying the tool requirements for various types of maintenance, installation, and construction work. Once this has been done, carefully select the hand tools required, in an adequate range of sizes and styles, and provide proper storage and transportation through the right choice of tool boxes and mobile cabinets.

Provide the necessary educational material to encourage correct use and proper care and you will be well on your way to hand-tool economy and safety.

TYPICAL TOOL APPLICATIONS

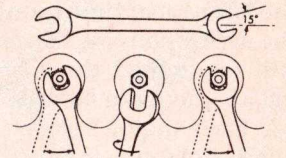
ADJUSTABLE WRENCHES. Always adjust worm so that jaws fit snugly. Use the locking model to secure the opening adjustment for repeated use on nuts or bolt heads of the same size. Worm and movable jaw should be cleaned and oiled occasionally to reduce wear.

SAFETY TIP "Pull" rather than "push" on the wrench handle, with the wrench head placed on the nut or bolt in the position illustrated.



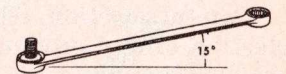
SINGLE-DOUBLE HEAD OPEN END WRENCHES. Jaws of most open end wrenches are at a 15° angle to the handle. This allows complete rotation of hex nuts in only 30° swing by "flopping" the wrench.

SAFETY TIP Fully engage jaws with nut. Under no circumstances should handle be hammered or extended with pipe for extra leverage. Use a striking face wrench which is designed for loosening frozen nuts or to set them up tightly.



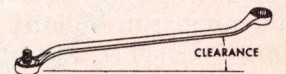
15° DOUBLE OFFSET BOX WRENCHES. Thin walls for close quarters and long handles for good leverage. 15° offset offers obstruction clearance with ample space for mechanic's hand. 12-pt. box for continuous rotation of nuts in only 30° swing.

SAFETY TIP It is extremely hazardous to modify this style for tubing work by removing a section of the box wall. Use a flare-nut wrench.



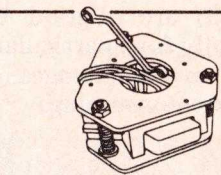
DOUBLE OFFSET BOX WRENCHES. This type, often referred to as a 45° offset wrench, is made in short, long and heavy service styles. In many instances it offers better obstruction clearance, as well as all of the other features of the 15° offset style.

SAFETY TIP Frequently check points for wear. Avoid using on case hardened fasteners.



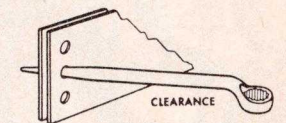
MIDGET-BOX WRENCHES. Offset design offers the advantage of obstruction clearance over flat, midget open-end styles.

SAFETY TIP Strong, hex box and drop-forged construction provide the additional strength and safe, firm grip required to loosen small, corroded or frozen hex nuts sometimes encountered in carburetor and electrical work.



STRUCTURAL BOX WRENCHES. This is the ideal type of structural wrench for heavy work. Handles are long and tapered for easy insertion in lining up bolt holes. Offset for obstruction clearance.

SAFETY TIP Where possible use box rather than open end structural wrench for safer grip on hex nuts.



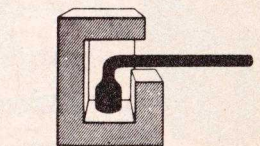
TEE HANDLE SOCKET WRENCHES. Flanges, caps and assemblies of many kinds have unavoidable obstructions requiring the use of this style wrench.

SAFETY TIP Note shanks have hexagon ends. For safe, extra leverage, remove pin and use adjustable wrench. Never use pipe on the tee handles.



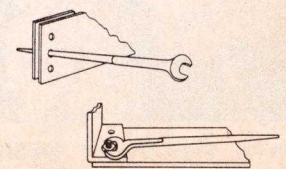
OFFSET SOCKET WRENCHES. Certain obstruction problems require the use of this offset style wrench. Made with hex or square openings.

SAFETY TIP Handle lengths are proportioned to opening size to provide adequate leverage. Extending with pipe is not recommended. Try using a socket and long flex handle instead.



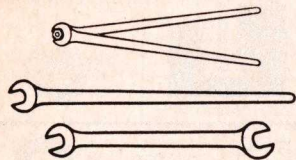
CONSTRUCTION AND STRUCTURAL WRENCHES. Both styles of wrench have long handles for extra leverage and are tapered for easy insertion in bolt holes to bring them in line. Structural pattern has the additional advantage of an offset handle for clearing obstructions.

SAFETY TIP In lining up bolt holes on steel work or flanges do not hammer wrenches to effect alignment. Hole and wrench damage can be severe.





PROPER SELECTION AND SAFE USE OF HAND TOOLS

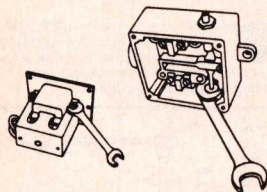
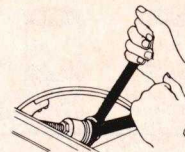


SINGLE AND DOUBLE HEAD TAPPET WRENCHES. Extremely thin lock or adjustment nuts are often best serviced with tappet wrenches. Their thin heads and extra long handles are a decided convenience when servicing engines while hot.

SAFETY TIP Do not grind or thin down faces, walls or jaws on wrenches. This weakens them structurally leaving them highly susceptible to cracking.

CHECK NUT OR THIN WRENCHES. Unusually thin heads for servicing extremely thin adjusting and lock nuts found on many types of machines. Made in single and double head patterns with openings from $\frac{13}{32}$ " to $1\frac{11}{16}$ ".

SAFETY TIP These wrenches are guaranteed amply strong for intended purpose, not for severe service.

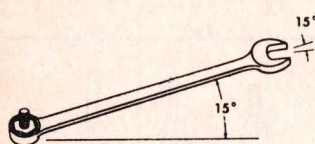


MIDGET 15° AND 15°-75° WRENCHES. For assembly, adjustment and repair of electrical components and instruments, these wrenches offer a choice of opening angle to meet the peculiarities that exist in this type of equipment.

SAFETY TIP Wrenches that are merely stamped or punched out from flat stock are bulky and loose fitting and do not offer the safe, snug-fitting, slim-jaw performance of drop-forged wrenches.

SET SCREW WRENCHES. Head heights of set screws are greater than ordinary bolt heads and require wrenches of more than average head thickness. Jigs, fixtures and machine tools involving frequent adjustment, most often, use hardened set screws.

SAFETY TIP Thick heads and 3-point contact offer greater safety and longer life than regular open ends.

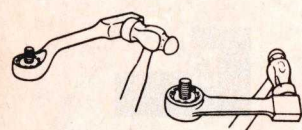
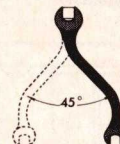


OPEN-END BOX WRENCHES. This design, made in long and short patterns, is particularly useful in tight spots. Both ends have the same opening size. The box head is offset 15° from the plane of the handle for obstruction clearance.

SAFETY TIP For the safety minded, this is one of the best styles to carry in a kit. With two head types the one best suited to the job can be used.

"S" OR CAR WRENCHES. Square nuts require a 90° swing for complete rotation with most open end wrenches. The "S" design permits flopping the wrench to reduce swing to 45°.

SAFETY TIP This style is favored by industries where square nuts and bolt heads are commonly used. The safest wrench is one designed for the job.

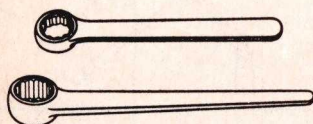
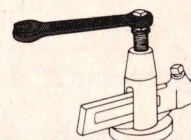


STRIKING FACE BOX WRENCHES. These wrenches are designed for heavy work where large nuts must be set up tight or frozen nuts loosened. Anvils are proportioned to opening size.

SAFETY TIP Unless obstructions require the use of the offset style, it is safer to use the straight pattern.

TOOL POST AND SQUARE BOX WRENCHES. Machine tools and industrial equipment are often supplied with wrenches of this type where numerous set screw adjustments are continuously required.

SAFETY TIP Head thicknesses are proportioned to grip the full height of screw heads regardless of size. Do not substitute with regular open ends.

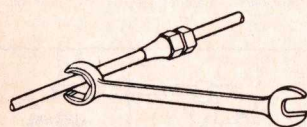
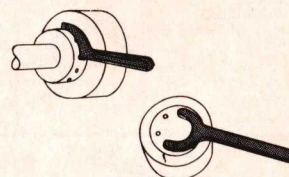


REGULAR AND HEAVY 12-PT. BOX WRENCHES. These styles offer a firmer, safer grip than is possible with open end wrenches. The heavy duty style provides extra strength in limited areas through their higher head walls which also give full contact area on large hex nuts.

SAFETY TIP Use the heavy duty, "high-collar" style for maximum safety under extreme torquing.

SPANNER WRENCHES. Pin, face and hook style spanners are made to many standard dimensions for turning packing glands and adjustable collars, etc.

SAFETY TIP Pins and hooks are accurately machined for proper fit. Do not use "home-made" tools.

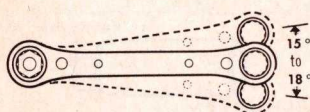
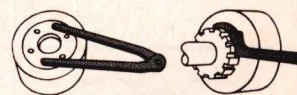


FLARE-NUT WRENCHES. Designed for use on flare nuts and fittings on tubing assemblies for hydraulic, pneumatic and air conditioning equipment. The hex open-box slips over the tubing. Thick head face prevents marred fittings in tightening.

SAFETY TIP Tube opening slot of box head is located at 22½° to the axis of handle for easiest, safest use.

ADJUSTABLE SPANNER WRENCHES. Made in pin and hook styles. Each size will service several sizes of adjusting collars, lock nuts, rings and bearings.

SAFETY TIP Although hooks and pins are tempered for long wear, discard if ends become worn or chipped.

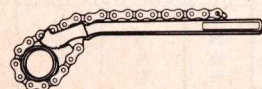
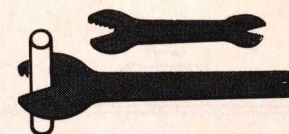


RATCHETING BOX WRENCHES. While this type does not offer the clearance advantages of the fixed-box type, its ratcheting feature is a decided convenience. The smaller sizes require only 18° and larger sizes only 15° swing to completely rotate hex nuts.

SAFETY TIP Keep ratcheting mechanism in good working order by occasional lubrication with light oil.

BULL DOG WRENCHES. These wrenches will grip pipe, square, hex or round shapes or any others that will fit between their strong tough jaws. Often used for holding while nuts, sleeves, collars and connectors of various types are being turned. The Bull Dog wrench is a popular style with railroads and shipyards.

SAFETY TIP Do not use after teeth have become rounded. Either file sharp or replace wrench.

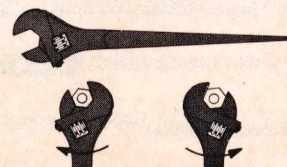


CHAIN WRENCH. With this type of tool, successive bites can be taken without removing the wrench from the work. It is particularly useful in unusually close quarters. Certain types of oil filters are also best serviced with this style wrench.

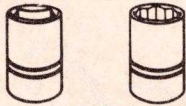
SAFETY TIP Teeth must be kept sharp. Never let them become rounded. At the first sign of wear they can be easily resharpened with a medium file.

ADJUSTABLE CONSTRUCTION WRENCH. Always tighten worm securely before using. Use tapered handle to line up bolt hole.

SAFETY TIP Position wrench to turn toward the fixed jaw.



PROPER SELECTION AND SAFE USE OF HAND TOOLS

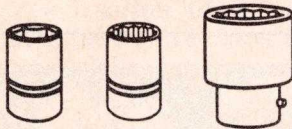
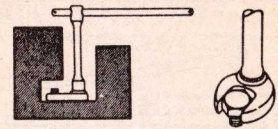


REGULAR 4 AND 8-POINT SOCKETS. Designed expressly for square nuts and bolt heads, such as found on set, machine, and lag screws, stove bolts and nuts. Made in $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " drives with openings up to 1".

SAFETY TIP Use wherever possible in preference to open end wrenches for safer, four sided grip.

CROWFOOT ATTACHMENTS. By coupling with extensions and drivers, such as off-set and flex handles, the operator can work these attachments into some extremely tight spots. Made in $\frac{3}{8}$ " drive only with openings $\frac{3}{8}$ " to $1\frac{1}{16}$ ".

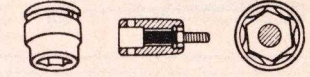
SAFETY TIP Accessibility of some nuts is only possible in a safe manner with crowfoot attachments.



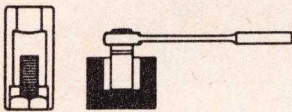
REGULAR 6 AND 12-POINT SOCKETS. Plus rapid seating, the 12-point style requires only half the swing of hex sockets when used with non-ratcheting drivers. All sockets in the 1" drive have safety attachment device for positive locking with drivers.

SAFETY TIP Use 6-point sockets when servicing undersize or badly worn nuts. Guarantee is void when hand sockets are used on impact guns.

POWER DRIVE SOCKETS. Made of extra tough alloy steel, specially heat-treated to withstand the constant shock and pounding involved in electric and pneumatic impact nut setting and power nut running. Surface drive sockets are designed to contact the flats rather than the corners of hex nuts and have the advantage of self-seating as required on multiple nut runners. Magnetic styles are used for self-tapping screws.



SAFETY TIP Two "don'ts" particularly apply to power sockets. Do not substitute bent nails for the proper retention methods. Do not use hand type sockets on power equipment.

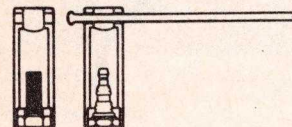
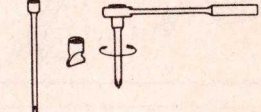


EXTRA DEEP 8-POINT SOCKETS. Particularly useful in running down and taking off lock nuts. Under certain conditions, it is possible to avoid the use of an extension by using an extra deep socket.

SAFETY TIP It is always well to remember that the safest, most efficient socket and driver assembly is the one made up of the fewest drive parts.

REGULAR AND PHILLIPS SCREWDRIVERS. Ideal where leverage is required beyond that provided by the average screwdriver. Various driver combinations and the convenience of ratcheting action make these tools invaluable.

SAFETY TIP Use of extensions and adapters with these attachments should be avoided for best rigidity.

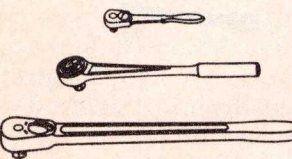


EXTRA DEEP 6 AND 12-POINT SOCKETS. Designed for use on spark plugs and nuts where the bolt or stud extends considerably beyond the surface of the nut face.

SAFETY TIP Where obstructions will permit, use a deep socket for clearance rather than a regular socket and extension.

HEX AND SCREWDRIVER BITS AND SOCKETS. Replaceable bits extend the detachable socket system to driving hollow head, slotted and Phillips screws. Adapter sockets are made in $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " drives.

SAFETY TIP Combine with various drivers to make safe, efficient tools to meet almost any situation.

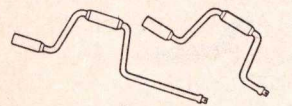
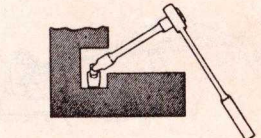


REVERSIBLE RATCHETS. As with other tools having mechanical parts, ratchets should receive good care for best service and longest life. With regularity, ratchets should be immersed in light machine oil overnight. Rotate or spin ratchet to flush out dirt or hardened lubricant and to remove excess oil.

SAFETY TIP Extensions or "persuaders" should not be used on ratchet handles. Use a larger drive size.

UNIVERSAL SOCKETS. Nuts in very restricted areas can sometimes be reached only with a universal socket. Some spaces are so tight that they will not even permit the use of a socket and universal joint. Made in $\frac{3}{8}$ " and $\frac{1}{2}$ " drives with 6 and 12-point openings from $\frac{3}{8}$ " to $\frac{3}{4}$ ". Operating range is approximately 130°.

SAFETY TIP Be sure socket is fully seated on nut. Use at least angle possible for safest operation.

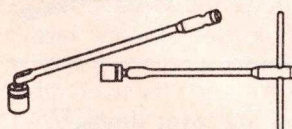
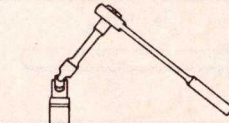


SPEEDERS. Various extensions and universal joints combine readily with speeders to reach many otherwise inaccessible places. In $\frac{1}{2}$ " drive Ratchet Adapter and Speeder make an excellent combination. When using speeders use sockets of the same drive size. It is risky to adapt up or down.

SAFETY TIP

UNIVERSAL JOINTS. While universal joints may be used up to angles of 65°, the lesser the angle the more efficient the operation. Retard wear with lubrication.

SAFETY TIP Universal joints should never be used as right angle drivers. This type of work should be done with flex or sliding tee-handles.

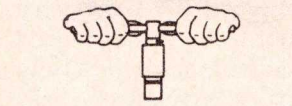
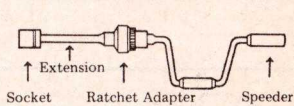


FLEX HANDLES. Occasional lubrication of the flex joint and retaining ball and spring will reduce wear. Maximum leverage in relation to drive size is "built-in" on most flex handles.

SAFETY TIP Additional leverage gained by extending handle invites injury and is sure to damage tool.

RATCHET ADAPTERS. The same lubrication instructions used for ratchets apply also to the ratchet adapter.

SAFETY TIP In an assembly using the ratchet adapter place it as close to the operator as possible for safe, convenient access to the shift lever.

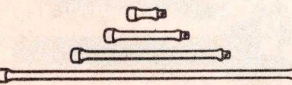
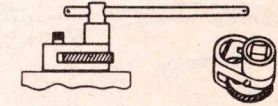


SLIDING T-HANDLES. Excellent as an offset tool, spinner or for two-hand use. This driver combines readily with sockets, extensions, universals and adapters to make a wide variety of highly useful tool combinations in all drive sizes.

SAFETY TIP This is another tool where temptation to extend leverage with pipe should be avoided.

STUD REMOVERS. The knurled eccentric is specially hardened to resist the extreme wear to which this part is subjected. Eccentric has two pivot holes to be interchanged according to diameter of stud.

SAFETY TIP Replace knurled eccentric at first sign of wear. Liberal use of penetrating oil should always be a pre-requisite of stud removal.

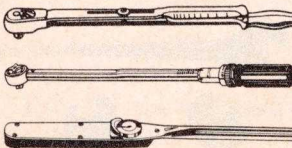
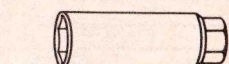


EXTENSIONS. Extensions will engage with sockets and drivers more readily by occasionally lubricating the ball and spring on the male end and cleaning out the female end. It is unwise practice to build extension on extension. Use a single extension of the proper length.

SAFETY TIP Use the shortest extension possible on all jobs to assure safe, rigid working conditions.

SPARK PLUG SOCKETS. The most popular spark plugs, currently in use, require a $1\frac{1}{16}$ " hex opening. This specially designed socket, made in $\frac{3}{8}$ " drive only, is ideal for use in restricted quarters. Rubber insert holds and protects plug.

SAFETY TIP In unusually tight spots take advantage of the $\frac{3}{4}$ " hex on the top of the socket.



TORQUE WRENCHES. Precision torque measuring tools should be handled with more than the normal care. Avoid first over-tightening a fastener with a conventional wrench before applying torque wrench.

SAFETY TIP Never exceed the maximum reading of the tool. In continuous use it is best to stay within 75% of its rated capacity.

ADAPTERS. Adapters are available for use on sockets with attachments of larger or smaller drive sizes. See table.

SAFETY TIP Caution must be exercised not to use the full leverage of drivers when adapting to sockets of a smaller drive size.



Originating Drive Size	Can Be Adapted DOWN To Drive Sockets in This Drive Size	Can Be Adapted UP To Drive Sockets in This Drive Size
$\frac{1}{4}$	—	$\frac{3}{8}$
$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$
$\frac{3}{4}$	$\frac{1}{2}$	1
1	$\frac{3}{4}$	—



NOMINAL WRENCH OPENINGS AS RELATED TO NEW AMERICAN STANDARD NUTS AND BOLTS

Nominal Wrench Opening	REGULAR SERIES Hex and Square Nuts and Bolts		HEAVY SERIES Hex and Square Nuts Hex Head Bolts		FINISHED SERIES Regular and Thick Hex Nuts Hex Head Bolts		For Hex Head CAP SCREWS Diameters of Screws	For Square Head SET SCREWS Diameters of Screws	For Square or Hex Machine Screw Nuts and Stove Bolt Nuts Size or Diam.
	For Nuts For These Sizes of Bolts	For Heads of Bolts of These Diameters	For Nuts For These Sizes of Bolts	For Heads of Bolts of These Diameters	For Nuts For These Sizes of Bolts	For Heads of Bolts of These Diameters			
5/32									No. 0 & 1
3/16									No. 2 & 3
7/32								No. 10	
1/4								No. 12	No. 4
								1/4	
5/16								5/16	No. 5 & 6
11/32								3/8	No. 8
3/8		*1/4						7/16	No. 10
7/16	1/4	1/4			1/4	1/4	1/4		No. 12 & 1/4
1/2		5/16	1/4		5/16	5/16	5/16	1/2	
9/16	5/16	3/8	5/16		3/8	3/8	3/8	9/16	5/16
19/32	3/8	7/16				7/16	7/16	5/8	3/8
5/8									
11/16			3/8		7/16	1/2	1/2	3/4	
3/4	7/16	1/2	7/16		1/2				
25/32									
13/16	1/2	9/16				9/16	9/16		
7/8	9/16		1/2	1/2	9/16			7/8	
15/16	5/8	5/8	9/16		5/8	5/8	5/8	1	
1			5/8	5/8					
1- 1/16									
1- 1/8	3/4	3/4	3/4	3/4	3/4	3/4	3/4	1-1/8	
1- 1/4								1-1/4	
1- 5/16	7/8	7/8			7/8	7/8	7/8	1-3/8	
1- 3/8									
1- 7/16			7/8	7/8					
1- 1/2	1	1	1	1	1	1	1	1-1/2	
1- 5/8									
1-11/16	1-1/8	1-1/8			1-1/8	1-1/8	1-1/8		
1-13/16			1-1/8	1-1/8					
1- 7/8	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4		
2									
2- 1/16	1-3/8	1-3/8	1-1/4	1-1/4	1-3/8	1-3/8	1-3/8		
2- 3/16			1-3/8	1-3/8					
2- 1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2		
2- 3/8									
2- 7/16	1-5/8	1-5/8			1-5/8	1-5/8			
2- 9/16			1-5/8	1-5/8					
2- 5/8	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4	1-3/4			
2- 3/4									
2-13/16	1-7/8	1-7/8			1-7/8	1-7/8			
2-15/16			1-7/8	1-7/8					
3	2	2	2	2	2	2			
3- 1/8									
3- 3/8	2-1/4	2-1/4			2-1/4	2-1/4			
3- 1/2			2-1/4	2-1/4					
3- 3/4	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2			
3- 7/8									
4- 1/8	2-3/4	2-3/4			2-3/4	2-3/4			
4- 1/4			2-3/4	2-3/4					
4- 1/2	3	3	3	3	3	3			
4- 5/8									
4- 7/8		3-1/4							
5			3-1/4						
5- 1/4		3-1/2							
5- 3/8			3-1/2						
5- 5/8		3-3/4							
5- 3/4			3-3/4						
6		4							
6- 1/8			4						

* Square Only.

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